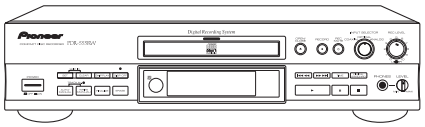
Service Manual



ORDER NO.
RRV1983

COMPACT DISC RECORDER

PDR-555RW

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model	Power Requirement	Remarks
	PDR-555RW		
KU/CA	◯	AC120V	
MY	◯	AC220-230V	

- **Refer to the service guide RRV2055 for PDR-555RW.**

FOR U.S. MODELS

NECESSARY INFORMATION FOR DHHS RULES MARKED ON THE REAR BASE AND ON THE TOP OF CD MECHANISM AS BELOW.

DANGER – LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.

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T – IZK OCT. 1998 Printed in Japan

1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

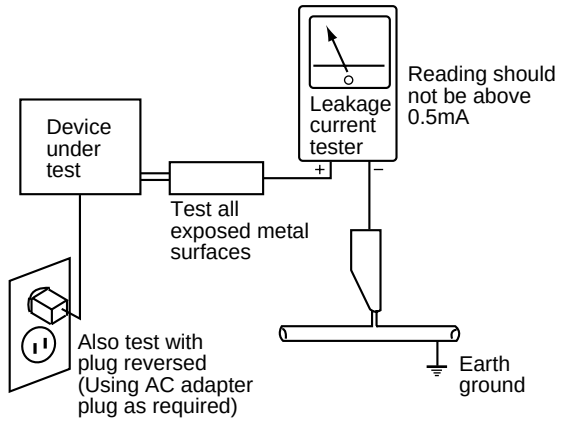
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

IMPORTANT

THIS PIONEER APPARATUS CONTAINS LASER OF CLASS III b.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUTED PERSON.

LASER DIODE CHARACTERISTICS

MAXIMUM OUTPUT POWER: 23 mW
WAVELENGTH: 778 – 787 nm

LABEL CHECK

MY Type

VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!
Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
PRW1233

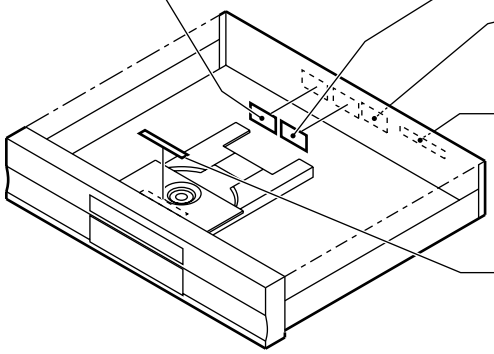
MY Type

ADVARSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAFBRYDERE ER UDE AF FUNKTION.
UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT!
UNSICHTBARE LASER-STRAHLUNG TRITT AUS, WENN DECKEL (ODER KLAPPE) GEÖFFNET IST! NICHT DEM STRAHL AUSSETZEN!
VRW1094

MY Type

CLASS 1
LASER PRODUCT

Printed on Rear Panel



KU/CA type

DANGER — LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM.

Printed on Rear Panel

DANGER — LASER RADIATION WHEN OPEN.
AVOID DIRECT EXPOSURE TO BEAM. PRW1516-A

Additional Laser Caution

1. Laser Interlock Mechanism
   The position of the switch (S601) for detecting loading state is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch (S601) is not on $\overline{\text{CLMP}}$ terminal side ($\overline{\text{CLMP}}$ signal is OFF or high level.). Thus, the interlock will no longer function if the switch (S601) is deliberately set to $\overline{\text{CLMP}}$ terminal side (low level).
   The interlock also does not function in the test mode ∗.
   Laser diode oscillation will continue, if pin 1 of M51593FP (IC101) on the PRE-AMP BOARD ASSY mounted on the pickup assembly is connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).

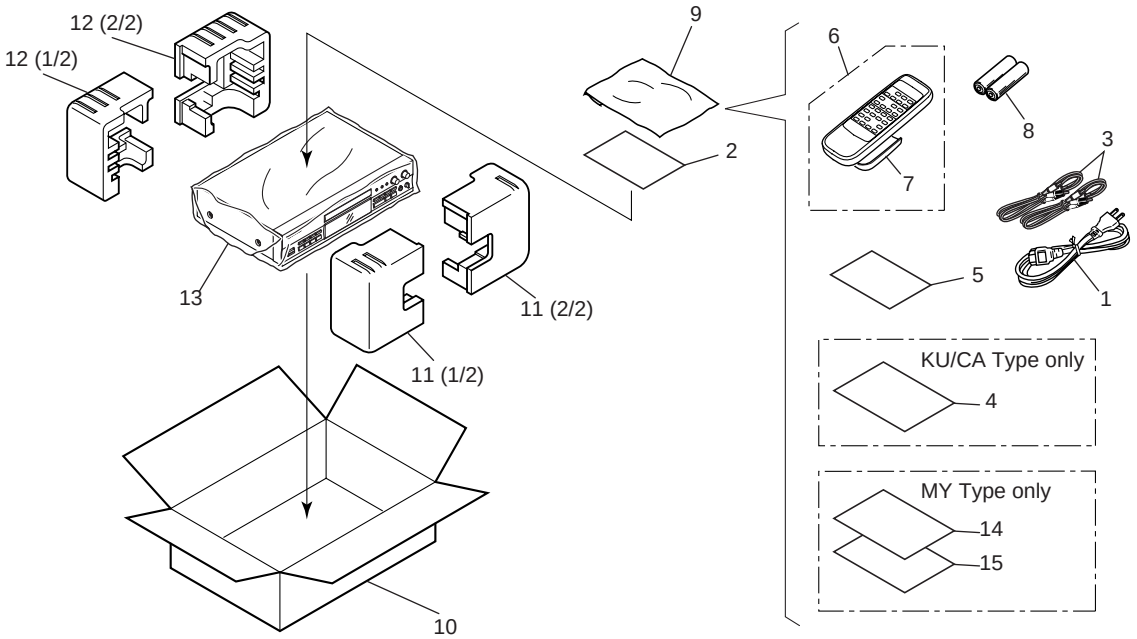
2. When the cover is opened with the servo mechanism block removed and turned over, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

∗ Refer to page 49 .

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING



(1) PACKING PARTS LIST

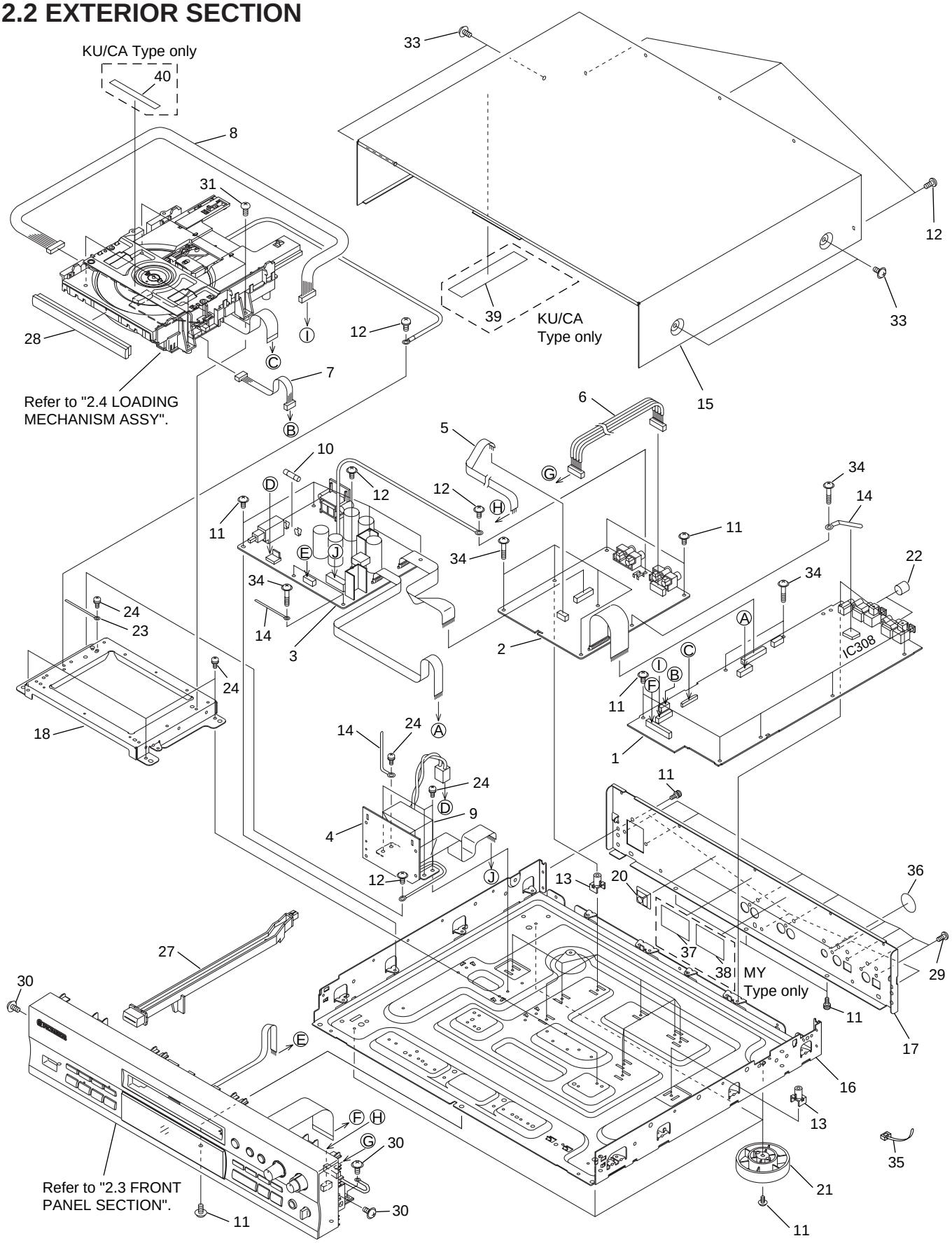
Mark	No.	Description	Part No.
⚠	1	AC Power Cord	See Contrast table (2)
NSP	2	Warranty Card	See Contrast table (2)
	3	Audio Cable	PDE1248
	4	Operating Instructions	See Contrast table (2)
	5	Caution	See Contrast table (2)
	6	Remote Control Unit (CU-PD099)	PWW1144
	7	Battery Cover	AZA7123
NSP	8	Dry Cell Battery (R6P,AA)	VEM-013
	9	Polyethylene Bag	Z21-038
	10	Packing Case	See Contrast table (2)
	11	Protector (F)	RHA1238
	12	Protector (R)	RHA1239
	13	Seat	Z23-007
	14	Operating Instructions	See Contrast table (2)
	15	Operating Instructions	See Contrast table (2)

(2) CONTRAST TABLE

PDR-555RW/KU/CA and MY are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			PDR-555RW/KU/CA	PDR-555RW/MY	
⚠	1	AC Power Cord	ADG7021	ADG1127	
NSP	2	Warranty Card	ARY7023	ARY7022	
	4	Operating Instructions (English)	PRB1270	Not used	
	5	Caution	PRM1046	PRM1045	
	10	Packing Case	PHG2317	PHG2318	
	14	Operating Instructions (Dutch/Swedish/Spanish/Danish)	Not used	PRD1031	
	15	Operating Instructions (English/French/German/Italian)	Not used	PRE1269	

2.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

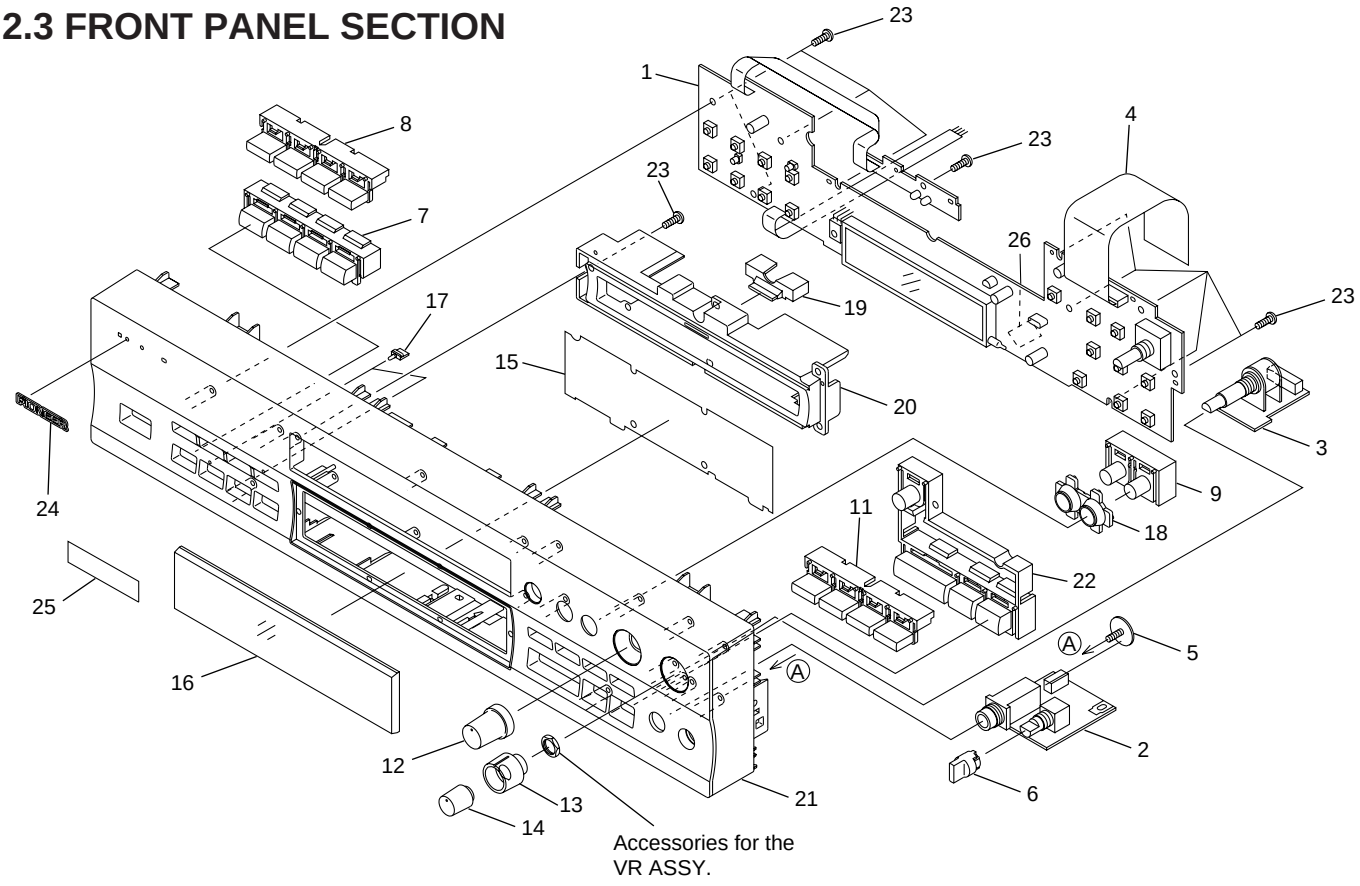
Mark	No.	Description	Part No.
⚠	1	SERVO DIGITAL Assy	See Contrast table (2)
	2	AUDIO Assy	See Contrast table (2)
⚠	3	POWER Assy	See Contrast table (2)
	4	TRANS Assy	See Contrast table (2)
	5	Jumper Wire (J)	D20PYY0335E
	6	Connector Assy (8P)	PDE1300
	7	Connector Assy	PG05KK-E10
	8	Connector Assy	PG09KK-E35
⚠	9	Power Transformer	See Contrast table (2)
⚠	10	Fuse (FU1)	See Contrast table (2)
	11	Screw (Steel)	ABA1011
	12	Screw (Steel)	ABA1207
NSP	13	PCB Mould	AMR1525
NSP	14	Cord Stopper	DNF1128
	15	Bonnet	PYY1254
NSP	16	Under Base	PNA2427
	17	Rear Base	See Contrast table (2)
NSP	18	Mecha Base	PNB1591
	19	• • • • •	
NSP	20	Binder Holder	PNW1021
	21	Insulator	PNW2766
NSP	22	Cap	VEC1810
	23	Cord Clamper	RNH-184
	24	Screw	RBA1132
	25	• • • • • •	
	26	• • • • • •	
	27	Power Button	PAC1877
	28	Tray Panel	PNW2798
	29	Screw	BBZ30P080FCC
	30	Screw	IBZ30P060FCC
	31	Screw	BBZ30P100FCC
	32	• • • • • •	
	33	Screw	FBT40P080FZK
	34	Screw	IBZ30P180FCC
	35	Binder	ZCA-SKB90BK
	36	Black Label	PRW1470
	37	Caution Label HE	See Contrast table (2)
	38	Caution Label	See Contrast table (2)
	39	65 Label	See Contrast table (2)
NSP	40	Laser Caution Label	See Contrast table (2)

(2) CONTRAST TABLE

PDR-555RW/KU/CA and MY are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			PDR-555RW/KU/CA	PDR-555RW/MY	
⚠	1	SERVO DIGITAL Assy	PWM2217	PWM2216	
	2	AUDIO Assy	PWZ3723	PWZ3729	
⚠	3	POWER Assy	PWZ3724	PWZ3741	
	4	TRANS Assy	PWZ3750	PWZ3725	
⚠	9	Power Transformer	PTT1345	PTT1346	
⚠	10	Fuse (FU1 : 1A)	REK1075	Not used	
⚠	10	Fuse (FU1 : T500mA)	Not used	AEK1051	
	17	Rear Base	PNA2428	PNA2429	
	37	Caution Label HE	Not used	PRW1233	
	38	Caution Label	Not used	VRW1094	
	39	65 Label	ORW1069	Not used	
NSP	40	Laser Caution Label	PRW1516	Not used	

2.3 FRONT PANEL SECTION



(1) FRONT PANEL SECTION PARTS LIST

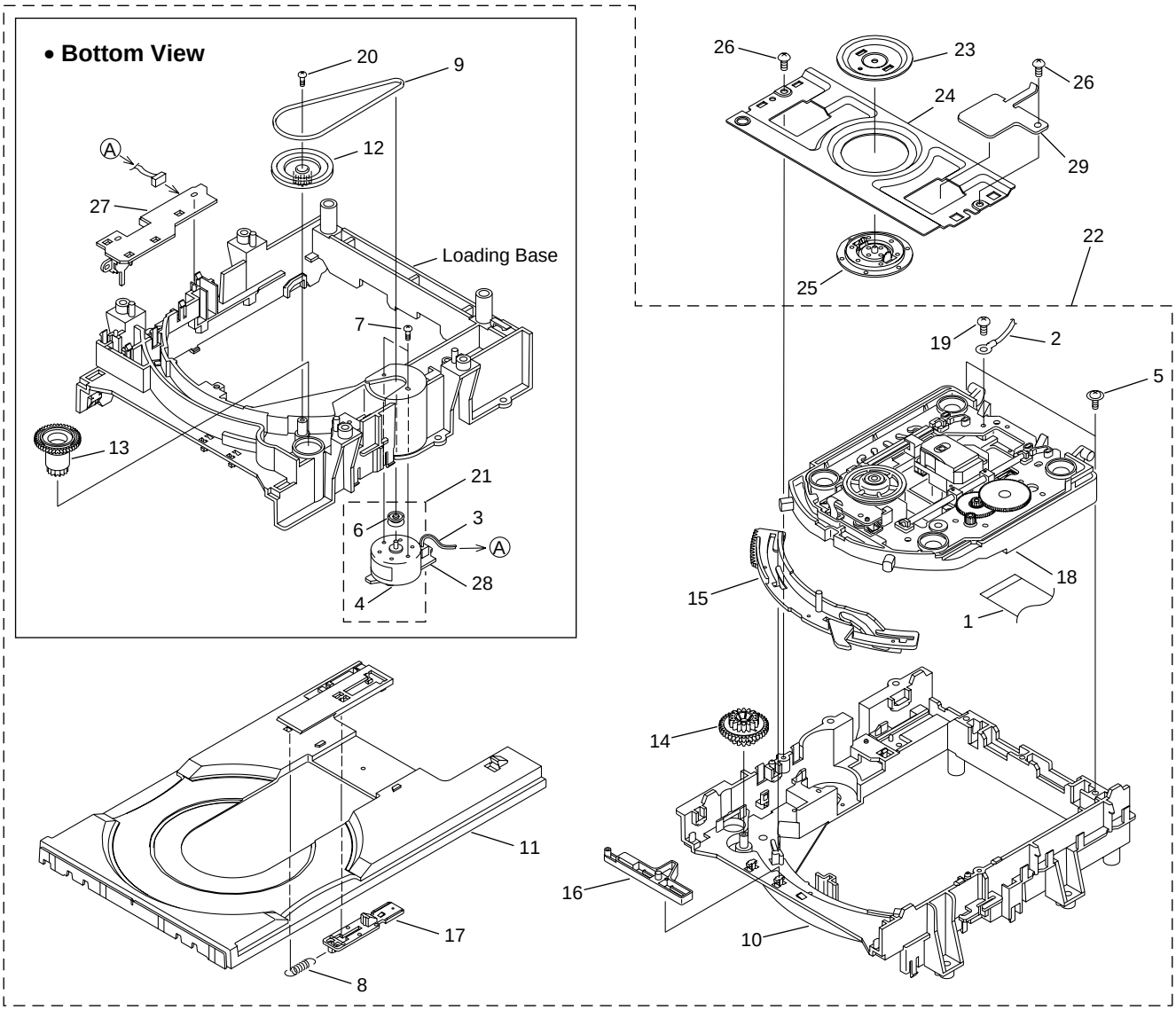
Mark	No.	Description	Part No.
	1	FUNCTION Assy	See Contrast table (2)
	2	HEADPHONE Assy	See Contrast table (2)
	3	VR Assy	PWZ3689
	4	22P F•F•C/60V	PDD1190
	5	Screw With Washer	ABA1005
	6	Knob	PAC1707
	7	Mode Button	PAC1873
	8	Manual Button L	PAC1874
	9	REC Button	PAC1876
	10	• • • • • •	
	11	Manual Button R	PAC1878
	12	VOL Knob Assy	PXA1616
	13	VOL Knob L	PAC1902
	14	VOL Knob R	PAC1903
	15	FL Sheet	See Contrast table (2)
	16	Display Window	PAM1757
	17	LED Lens	PNW2745
	18	REC Ring	PNW2795
	19	Lens	PNW2796
	20	Sub Panel	PNW2797
	21	Front Panel 555	See Contrast table (2)
	22	Play Button B	RAC2204
	23	Screw	PPZ30P100FMC
	24	Name Plate	PAN1376
	25	Getter Label 555	See Contrast table (2)
	26	IC (EEPROM)	PYY1196

(2) CONTRAST TABLE

PDR-555RW/KU/CA and MY are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			PDR-555RW/KU/CA	PDR-555RW/MY	
	1	FUNCTION ASSY	PYY1258	PYY1259	
	2	HEADPHONE Assy	PWZ3713	PWZ3688	
	15	FL Sheet	PAM1756	PAM1762	
	21	Front Panel 555	PNW2799	PNW2817	
	25	Getter Label 555	PRW1488	PRW1504	

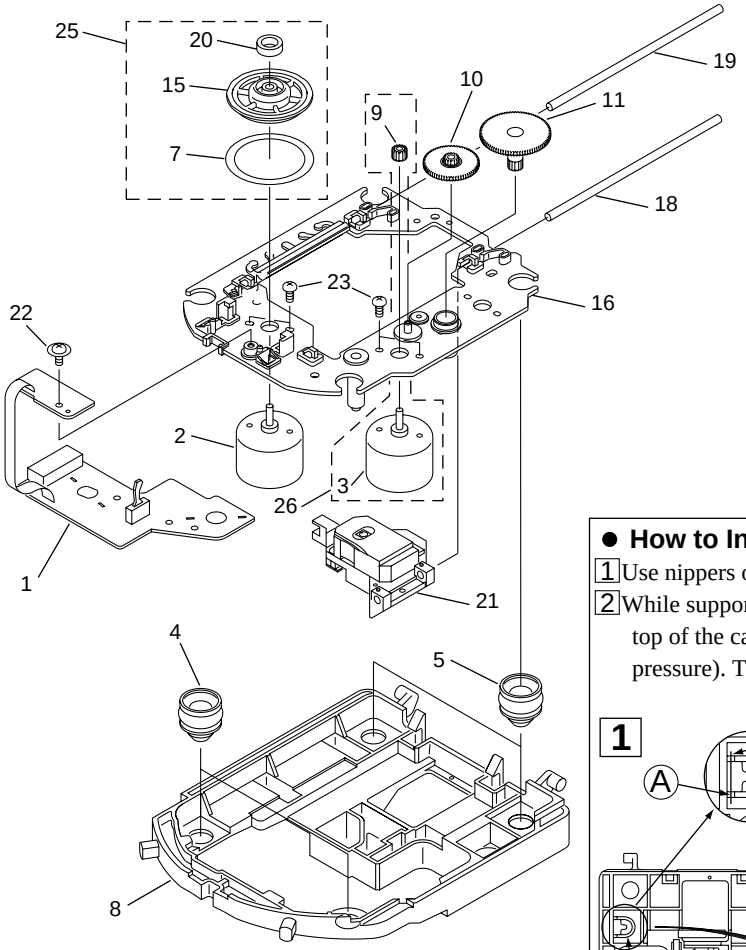
2.4 LOADING MECHANISM ASSY

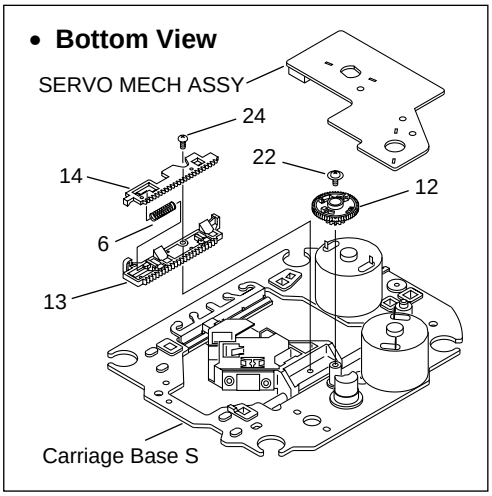


● LOADING MECHANISM ASSY PARTS LIST

Mark	No.	Description	Part No.
	1	32P F•F•C/30V	PDD1187
NSP	2	Earth Lead Unit	PDF1088
	3	Connector Assy	PG02KK-E35
	4	DC Motor	PXM1027
	5	Screw	DBA1006
	6	Motor Pulley	PNW1634
	7	Screw	VBA1055
	8	Tray Stopper Spring	VBH1277
	9	Rubber Belt	VEB1260
	10	Loading Base	VNL1730
	11	Tray	VNL1731
	12	Gear Pulley	VNL1733
	13	Loading Gear	VNL1734
	14	Drive Gear	VNL1735
	15	Drive Cam	VNL1736
	16	Lock Plate	VNL1820
	17	Tray Stopper	VNL1739
NSP	18	CD-RW SERVO MECH Assy	PXA1609
	19	Screw	BBZ26P040FMC
	20	Screw	IPZ20P080FMC
	21	Loading Motor Assy	VXX2505
NSP	22	Loading Mechanism Assy	PXA1608
	23	Clamper Plate	VNE2068
	24	Bridge	VNE2069
	25	Clamper	VNL1738
	26	Screw	IPZ26P060FCU
NSP	27	LOADING A Assy	PWZ3727
NSP	28	LOADING B Assy	PWZ3728
	29	Tray Holder	PNM1326

2.5 SERVO MECHANISM ASSY

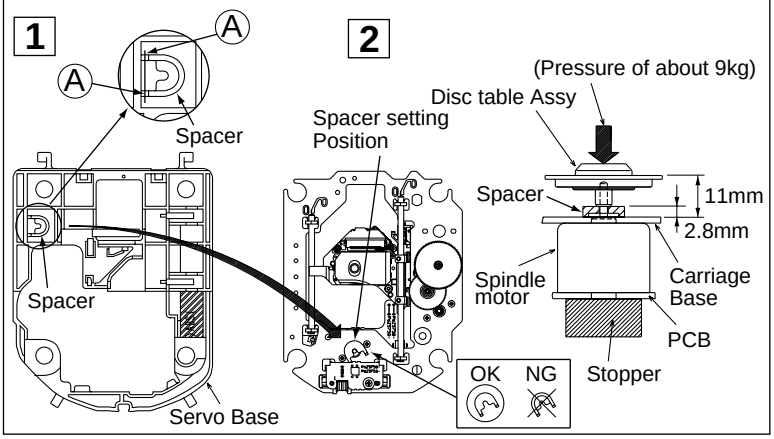




● **How to Install the Disc Table**

1 Use nippers or other tool to cut the two sections marked Ⓐ in figure 1 .

2 While supporting the spindle motor shaft with the stopper, put spacer on top of the carriage base, and stick the disc table on top (takes about 9kg pressure). Take off the spacer.



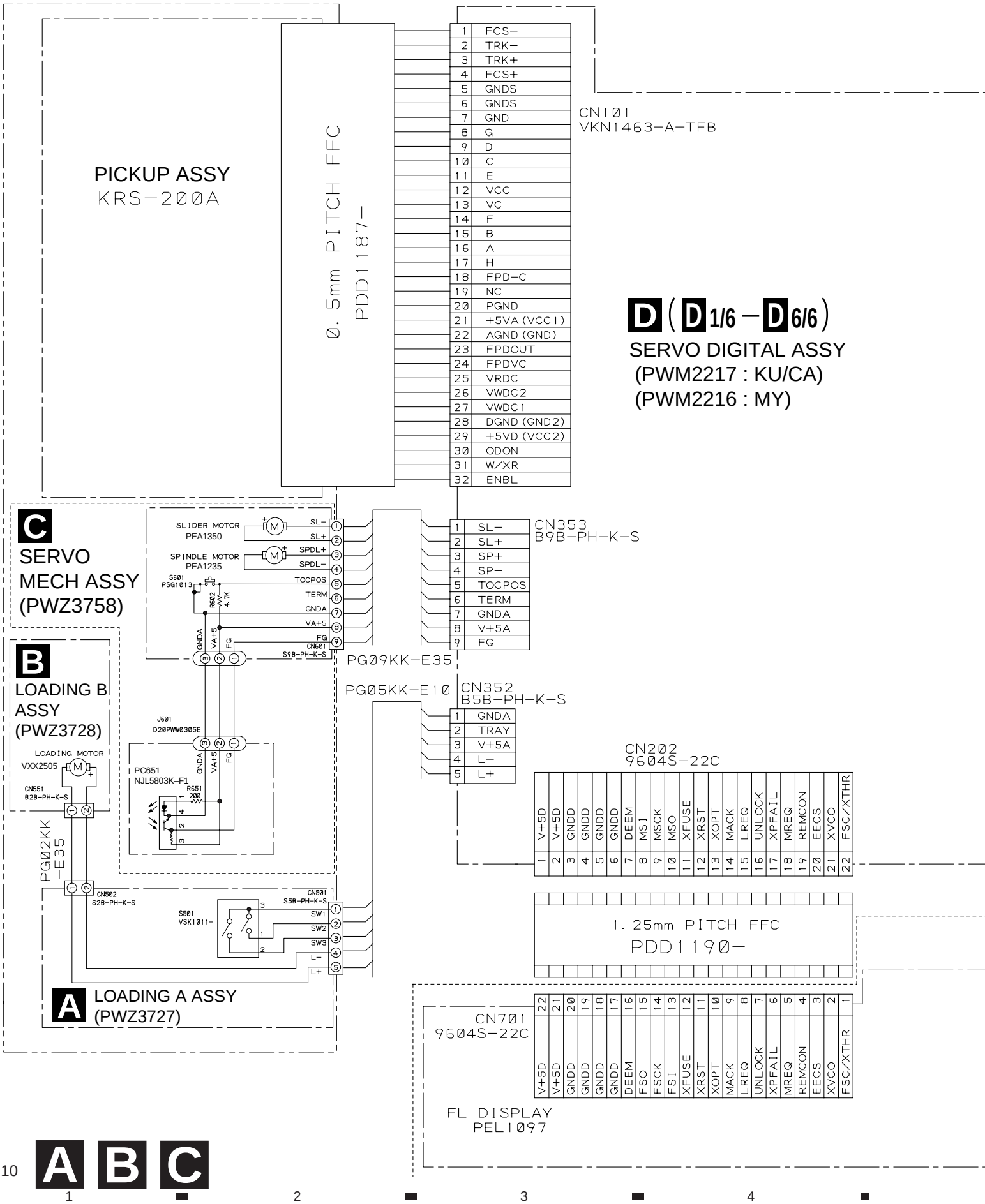
● SERVO MECHANISM ASSY PARTS LIST

Mark	No.	Description	Part No.
NSP	1	SERVO MECH Assy	PWZ3758
	2	D.C.mortor Assy	PEA1235
NSP	3	DC Motor	PXM1042
	4	Float Rubber A	AEB7063
	5	Float Rubber B	AEB7066
NSP	6	Rack Spring	DBH1285
NSP	7	Mirror Sheet	PNM1325
	8	Servo Base	PNW2853
	9	Pinion Gear	PNW2854
	10	Gear A	PNW2855
	11	Gear B	PNW2856
	12	Gear C	PNW2857
	13	Rack	PNW2858
	14	Rack Stopper	PNW2859
NSP	15	Disc Table	PNW2860

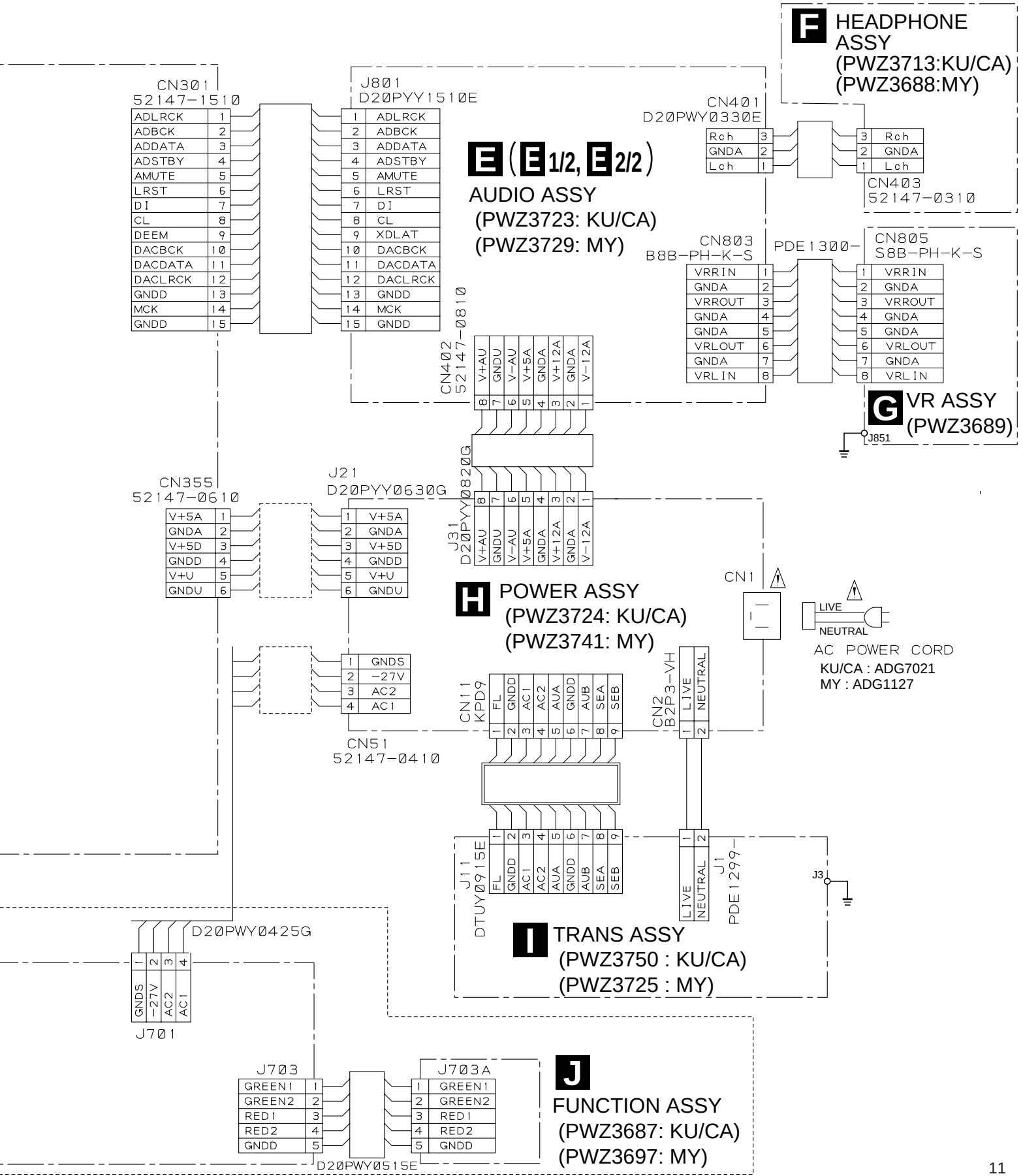
Mark	No.	Description	Part No.
	16	Carriage Base S	PNW2874
	17	• • • • •	
	18	Guide Bar	VLL1488
	19	Sub Guide Bar	VLL1489
NSP	20	Magnet	VYM1024
	21	CD-R Pickup	PEA1351
	22	Screw	IPZ20P060FMC
	23	Screw	PMZ20P030FMC
	24	Screw	JGZ17P030FMC
	25	Disc Table Assy	PEA1349
	26	Carriage Motor Assy	PEA1350

3. SCHEMATIC DIAGRAM

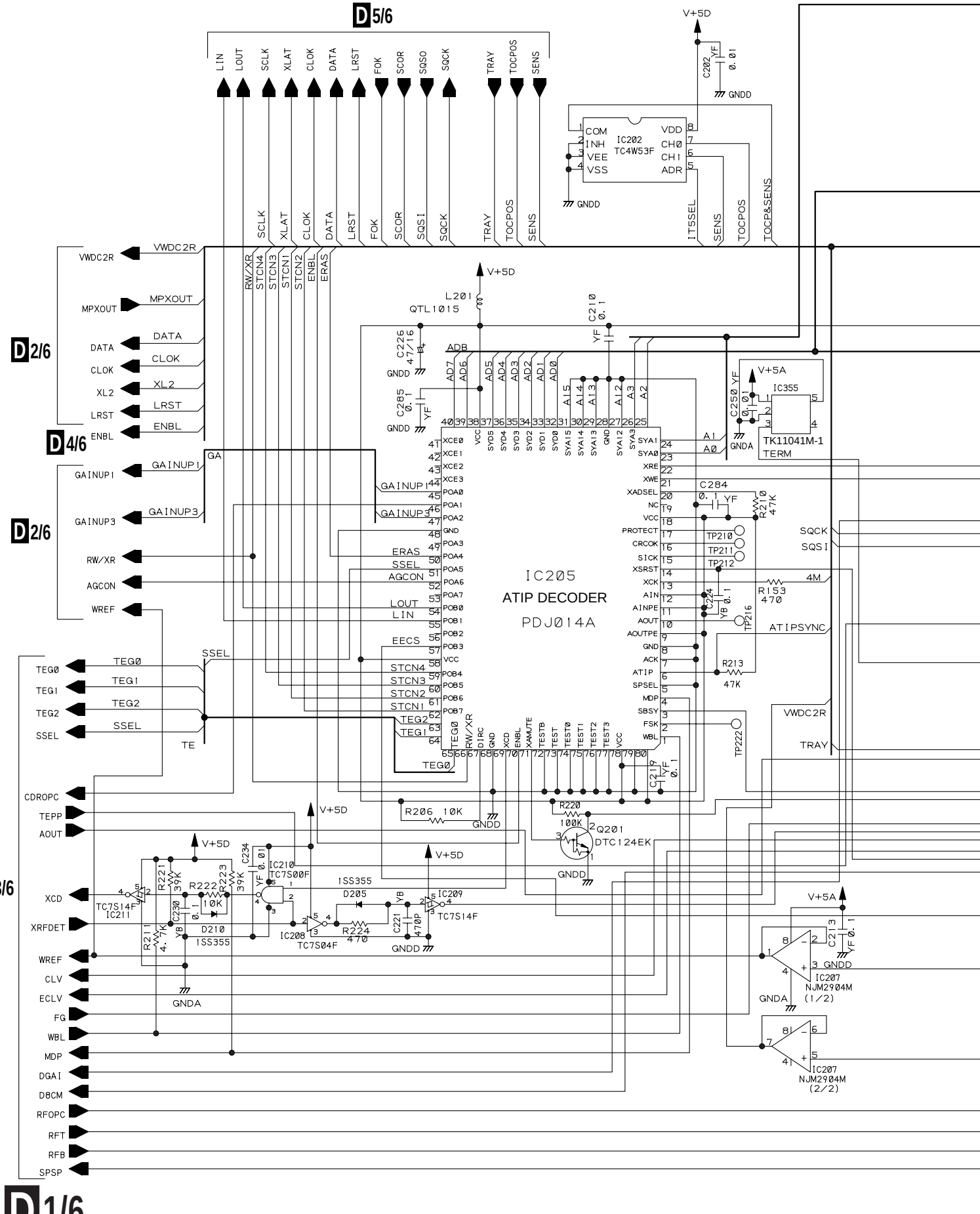
3.1 OVERALL CONNECTIONS, LOADING A, B, and SERVO MECH ASSEMBLIES



Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



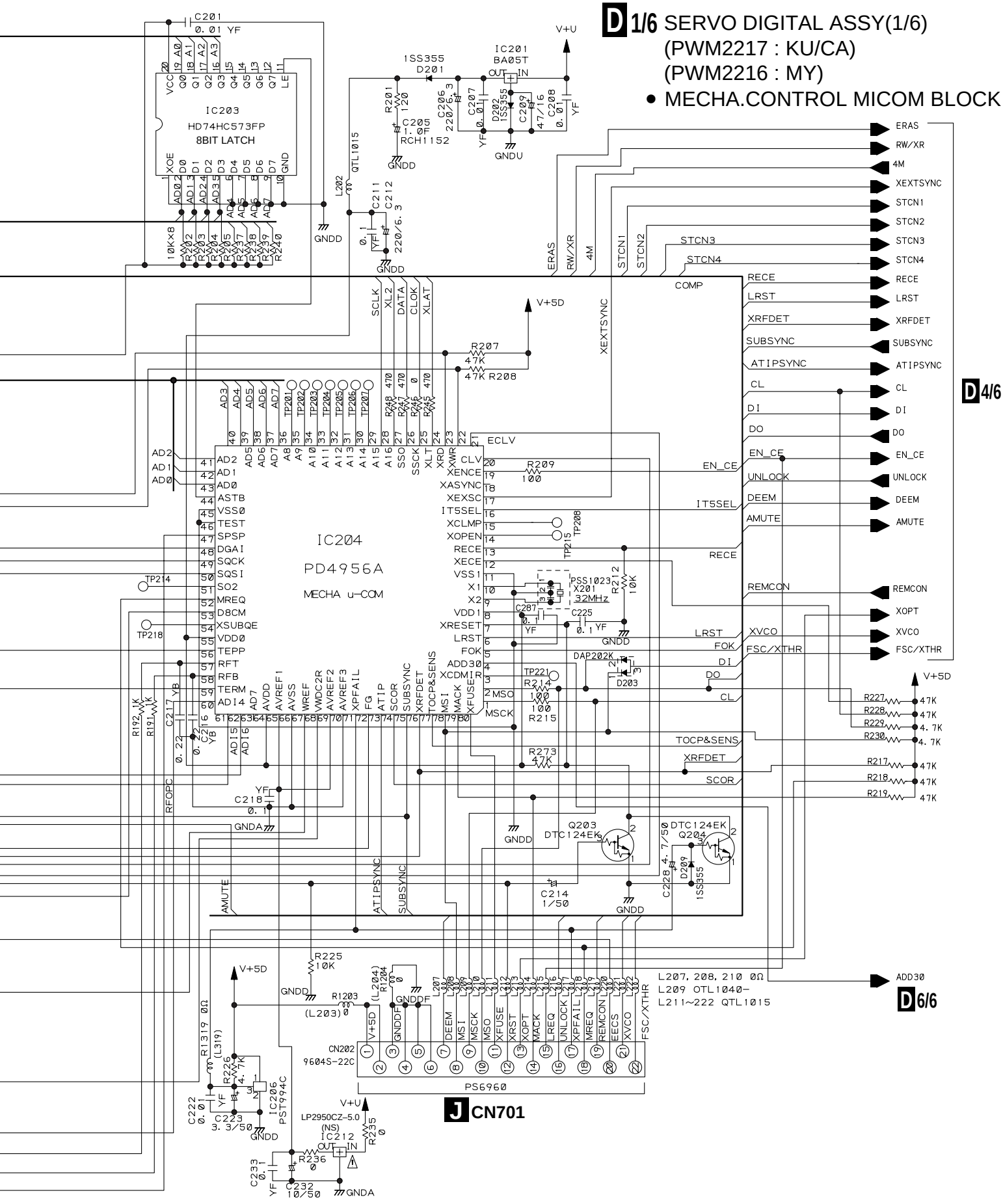
3.2 SERVO DIGITAL ASSY(1/6)



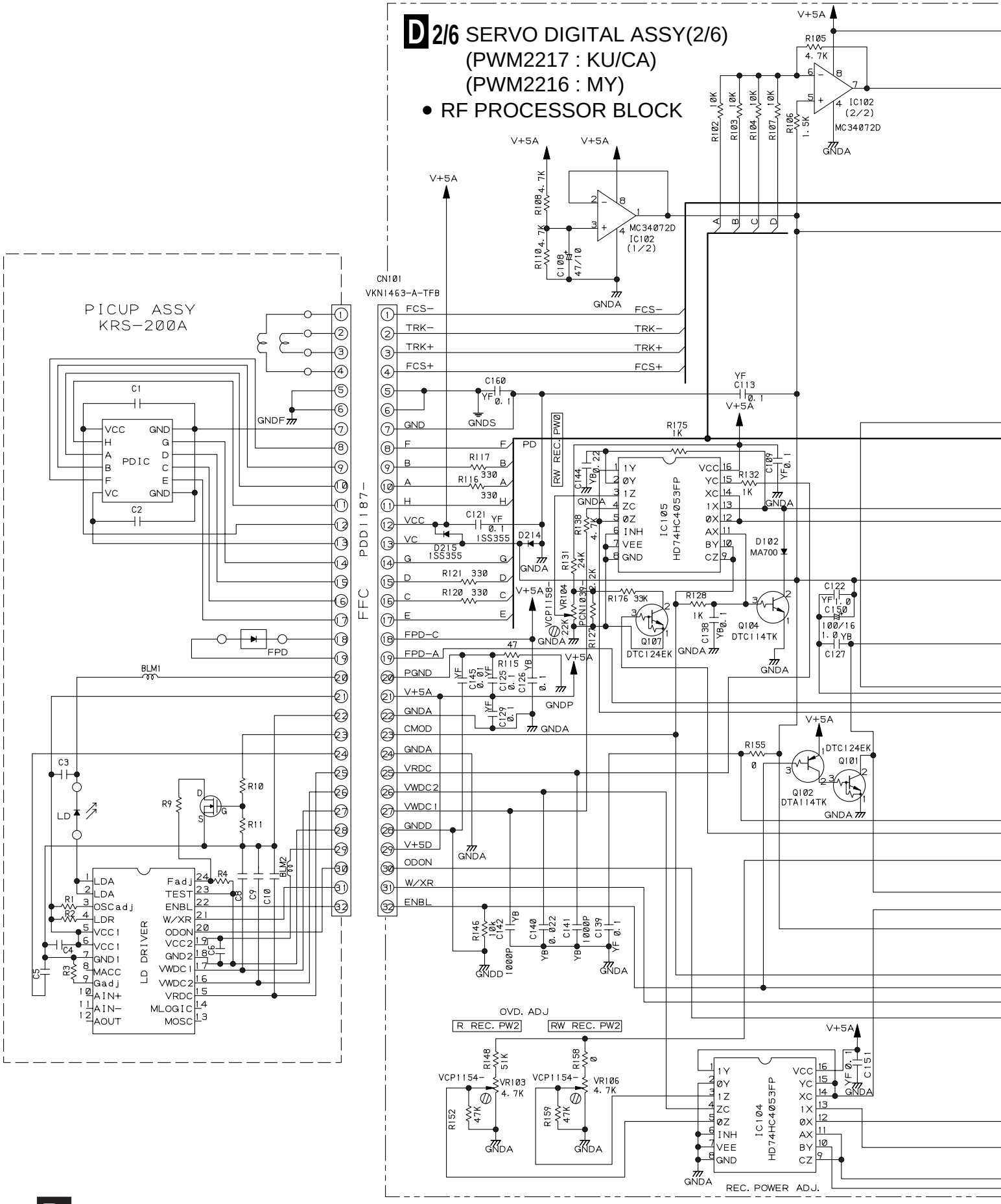
D 1/6 SERVO DIGITAL ASSY(1/6)

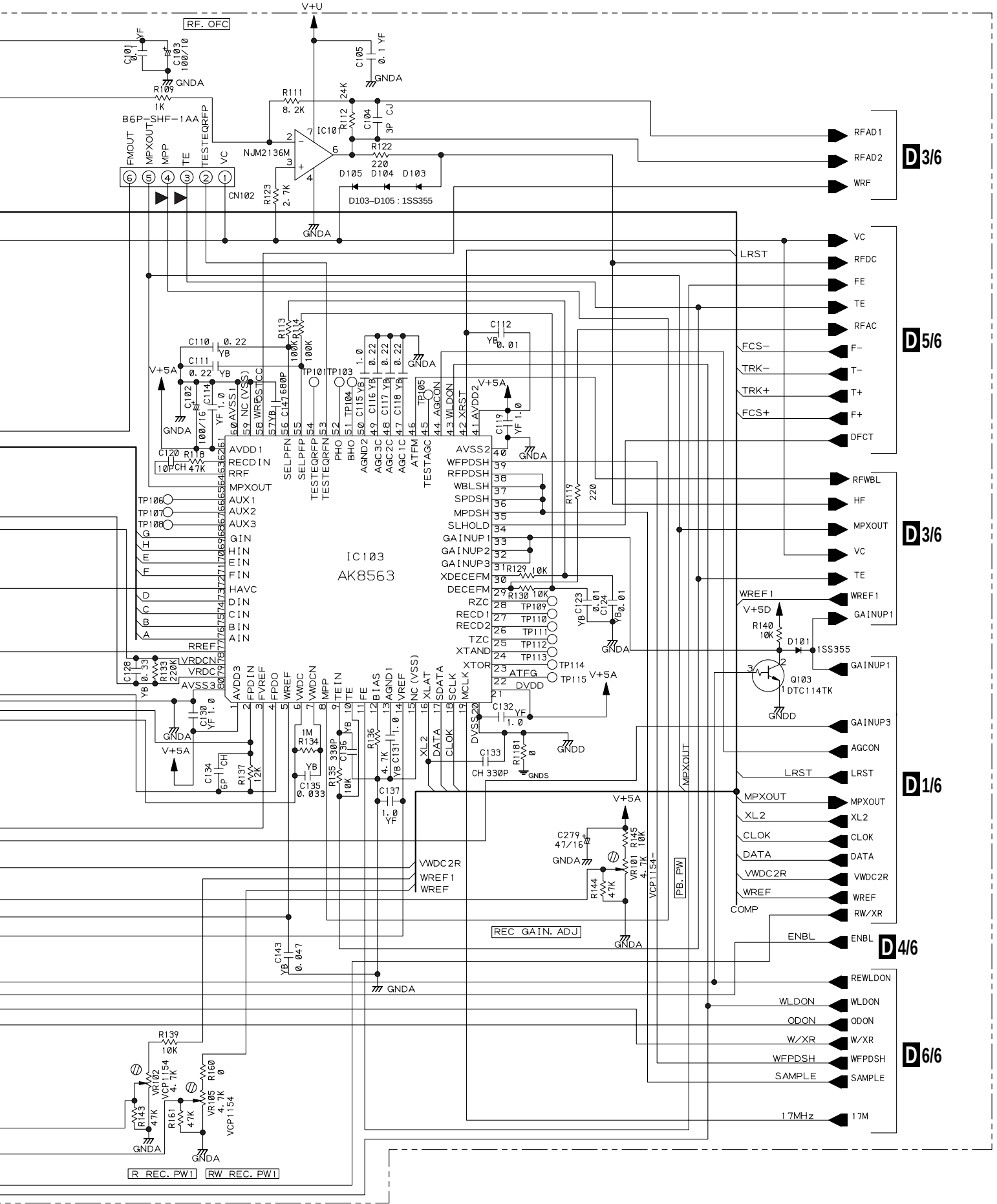
(PWM2217 : KU/CA)
(PWM2216 : MY)

- MECHA.CONTROL MICOM BLOCK

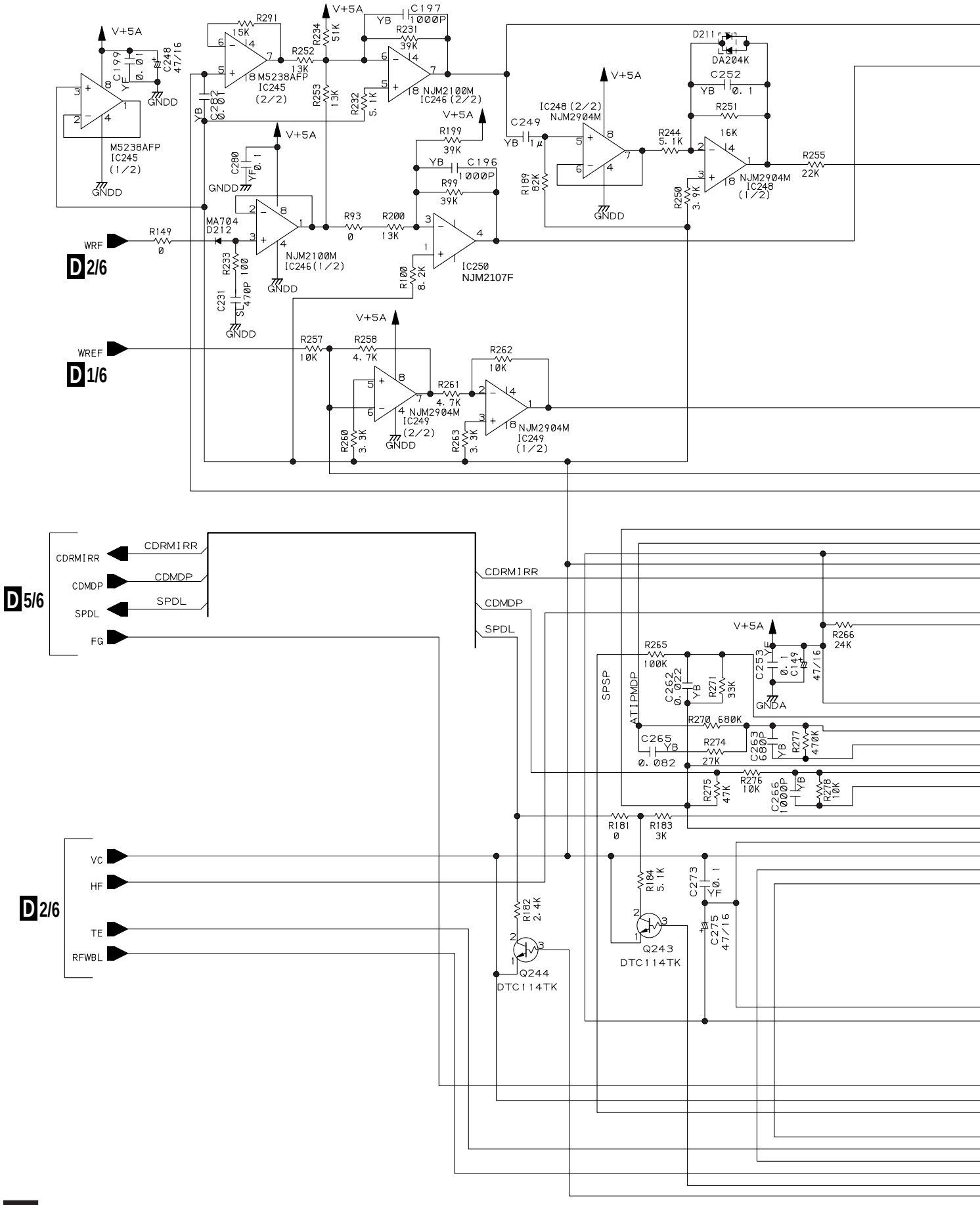


3.3 SERVO DIGITAL(2/6) and PICKUP ASSEMBLIES



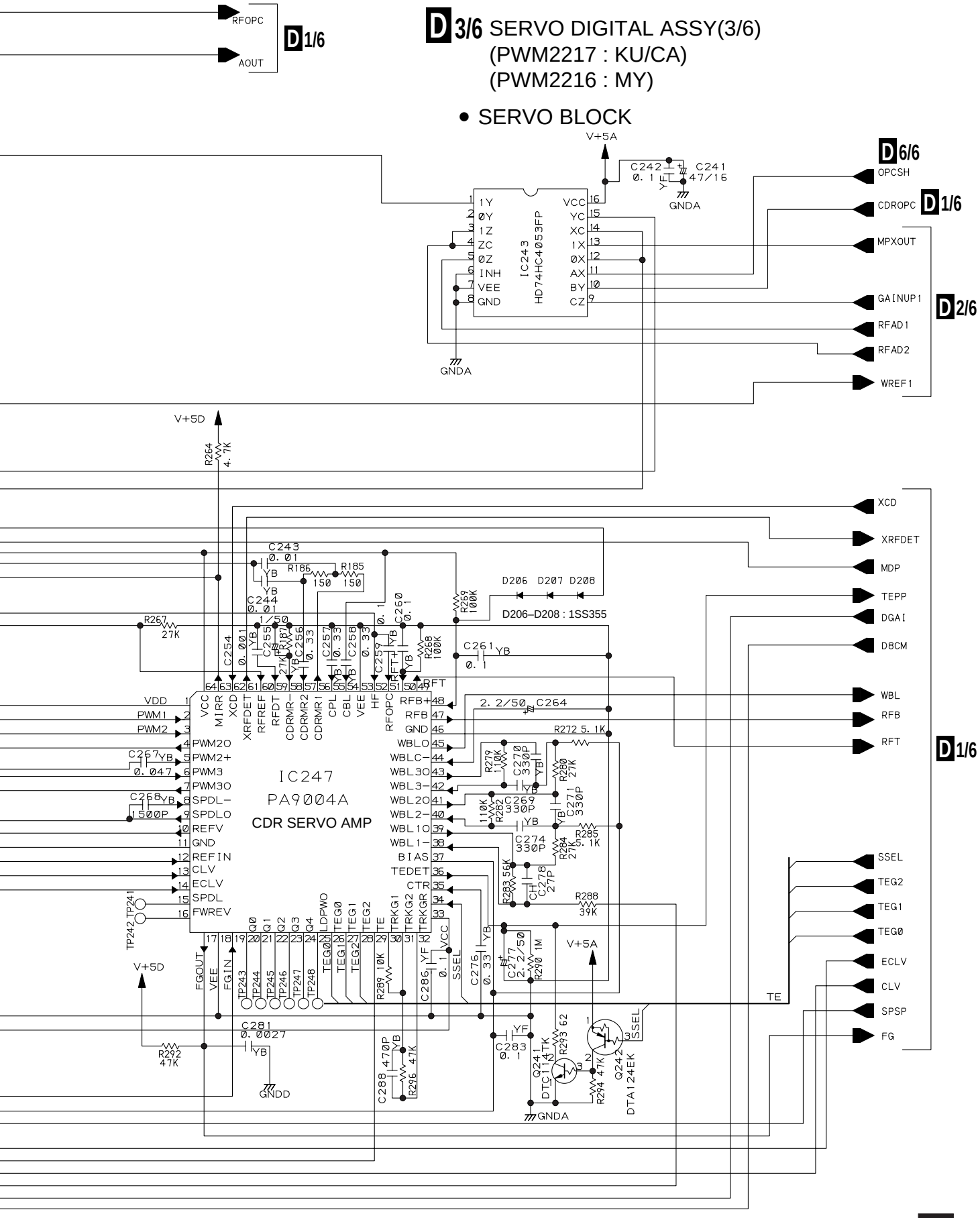

RF. OFC
V+U
IC101
NJM2136M
B6P-SHF-1AA
CN102
FMOUT
MPXOUT
MPP
TE
TESTEQRFP
VC
D105 D104 D103
D103–D105 : 1SS355
GNDA
IC103
AK8563
V+5A
V+5D
GNDD
GNDS
RFAD1
RFAD2
WRF
VC
RFDC
FE
TE
RFAC
F−
T−
T+
F+
DFCT
FCS−
TRK−
TRK+
FCS+
LRST
RFWBL
HF
MPXOUT
WREF1
GAINUP1
GAINUP3
AGCON
XL2
CLOK
DATA
VWDC2R
WREF
RW/XR
ENBL
REWLDON
WLDON
ODON
W/XR
WFPDSH
SAMPLE
17M
17MHz
COMP
PB. PW
REC GAIN. ADJ
R REC. PW1
RW REC. PW1
D1 3/6
D2 5/6
D3 3/6
D4 1/6
D5 4/6
D6 6/6
D2/6

3.4 SERVO DIGITAL ASSY(3/6)

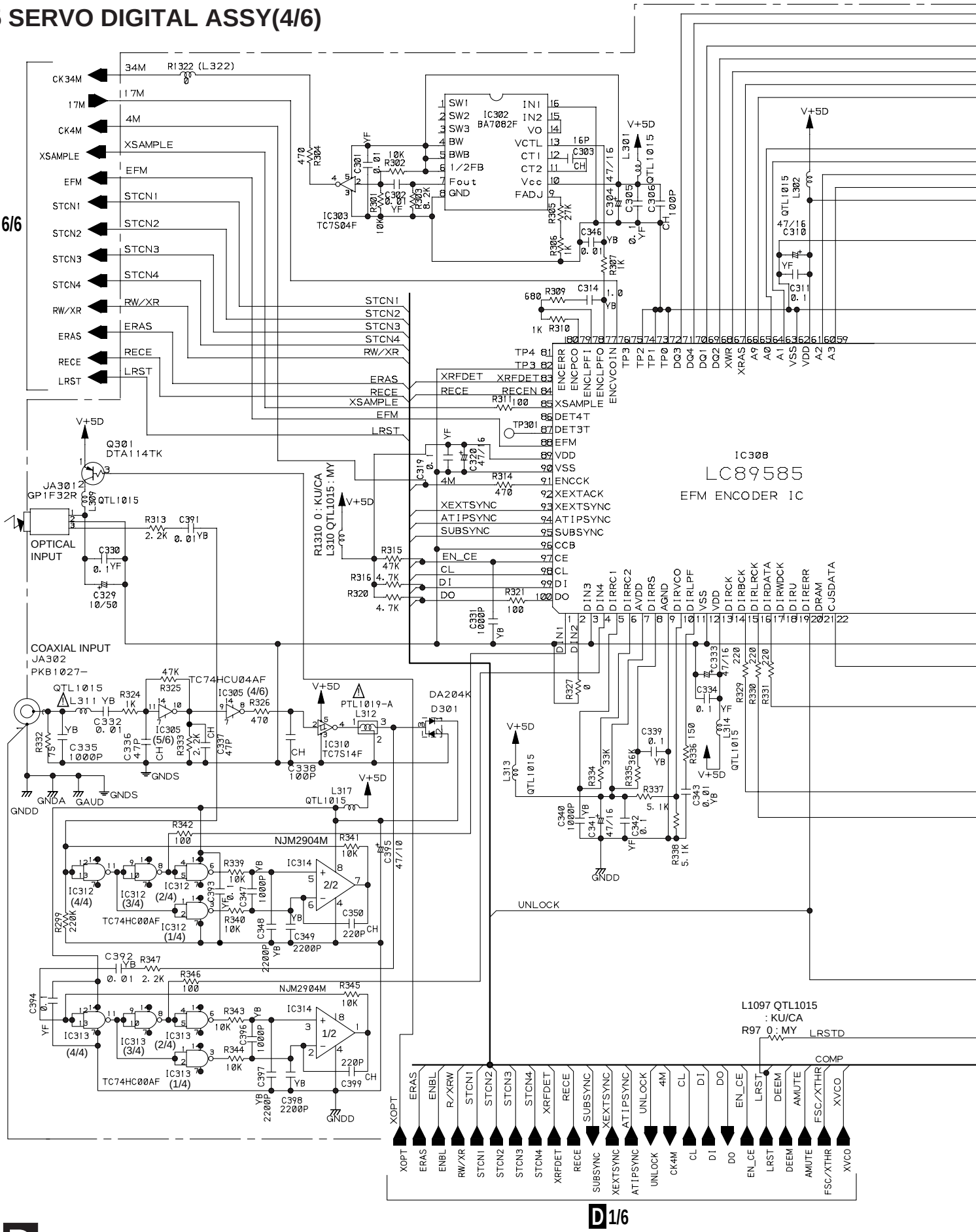


D 3/6 SERVO DIGITAL ASSY(3/6)
(PWM2217 : KU/CA)
(PWM2216 : MY)

- SERVO BLOCK



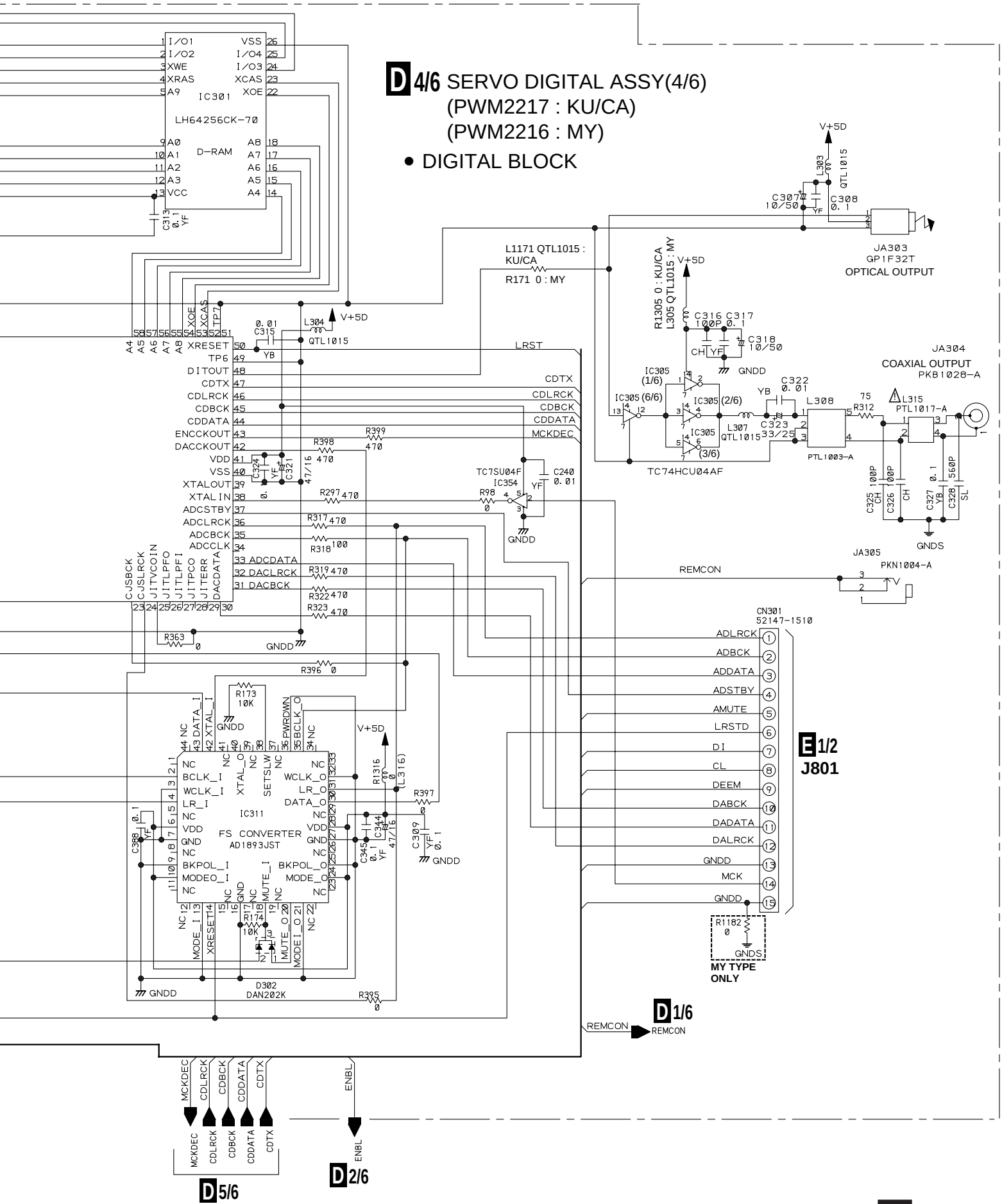
3.5 SERVO DIGITAL ASSY(4/6)



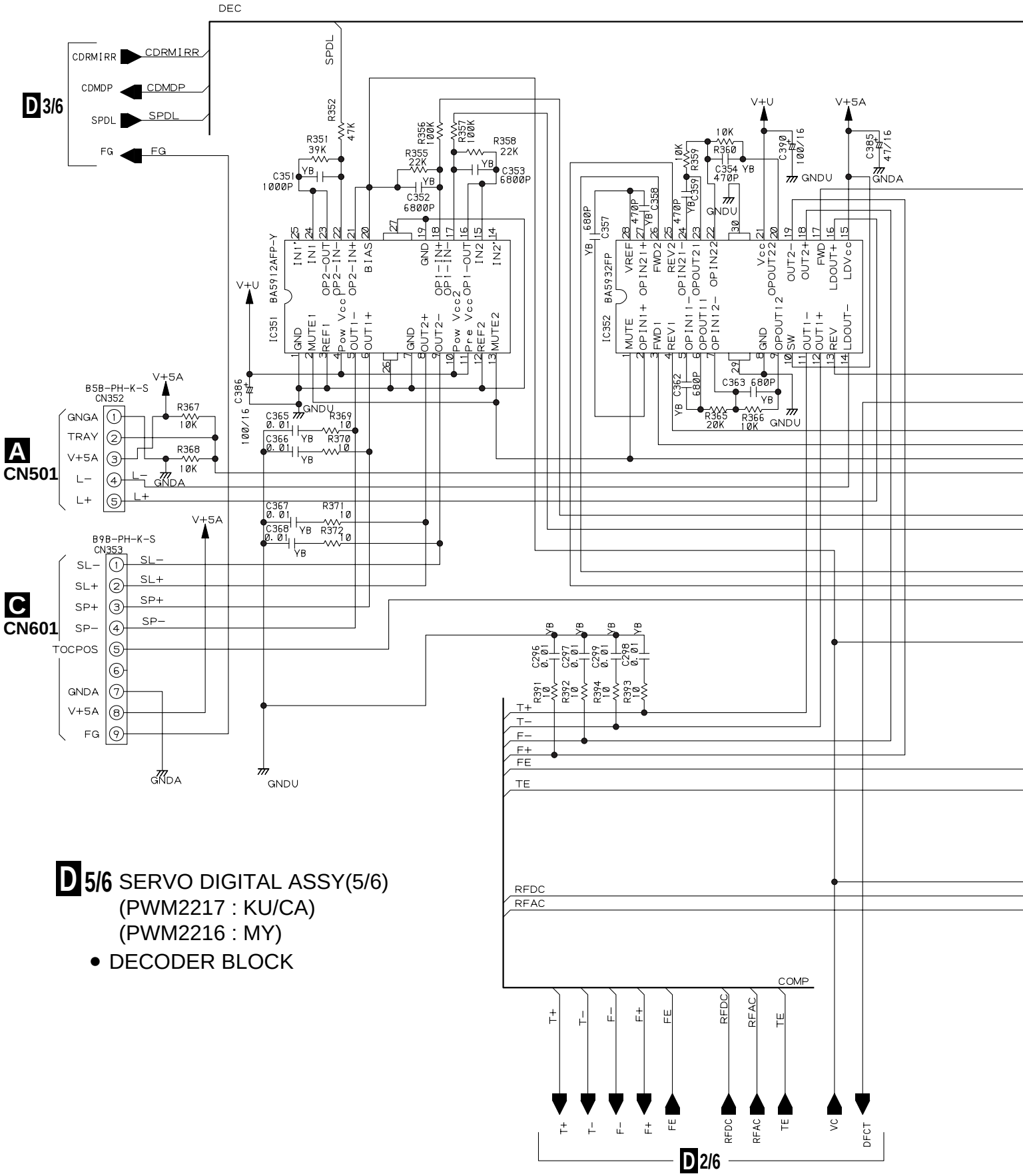
D 4/6 SERVO DIGITAL ASSY(4/6)

(PWM2217 : KU/CA)
(PWM2216 : MY)

- DIGITAL BLOCK

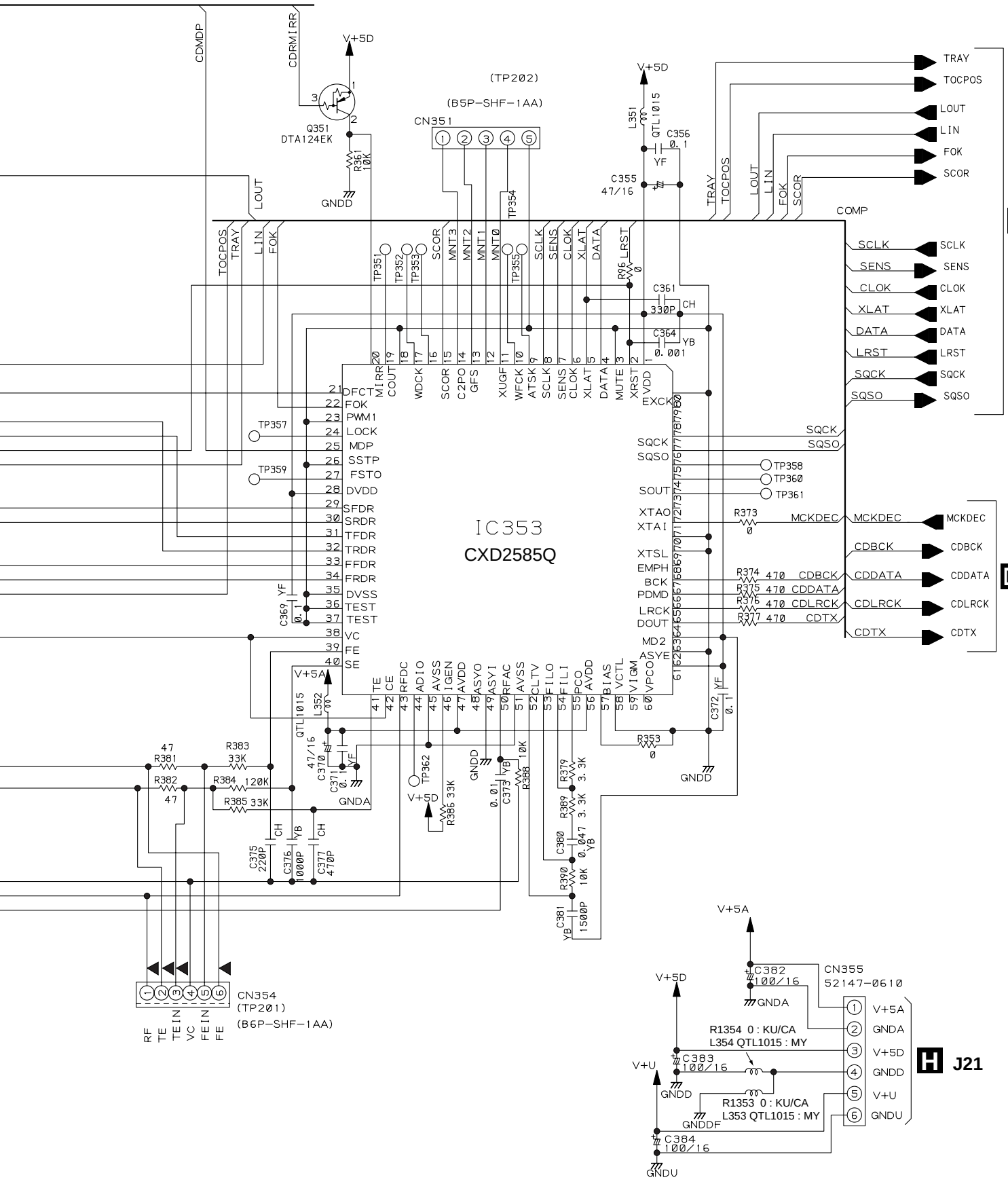


3.6 SERVO DIGITAL ASSY(5/6)



D 5/6 SERVO DIGITAL ASSY(5/6)
(PWM2217 : KU/CA)
(PWM2216 : MY)

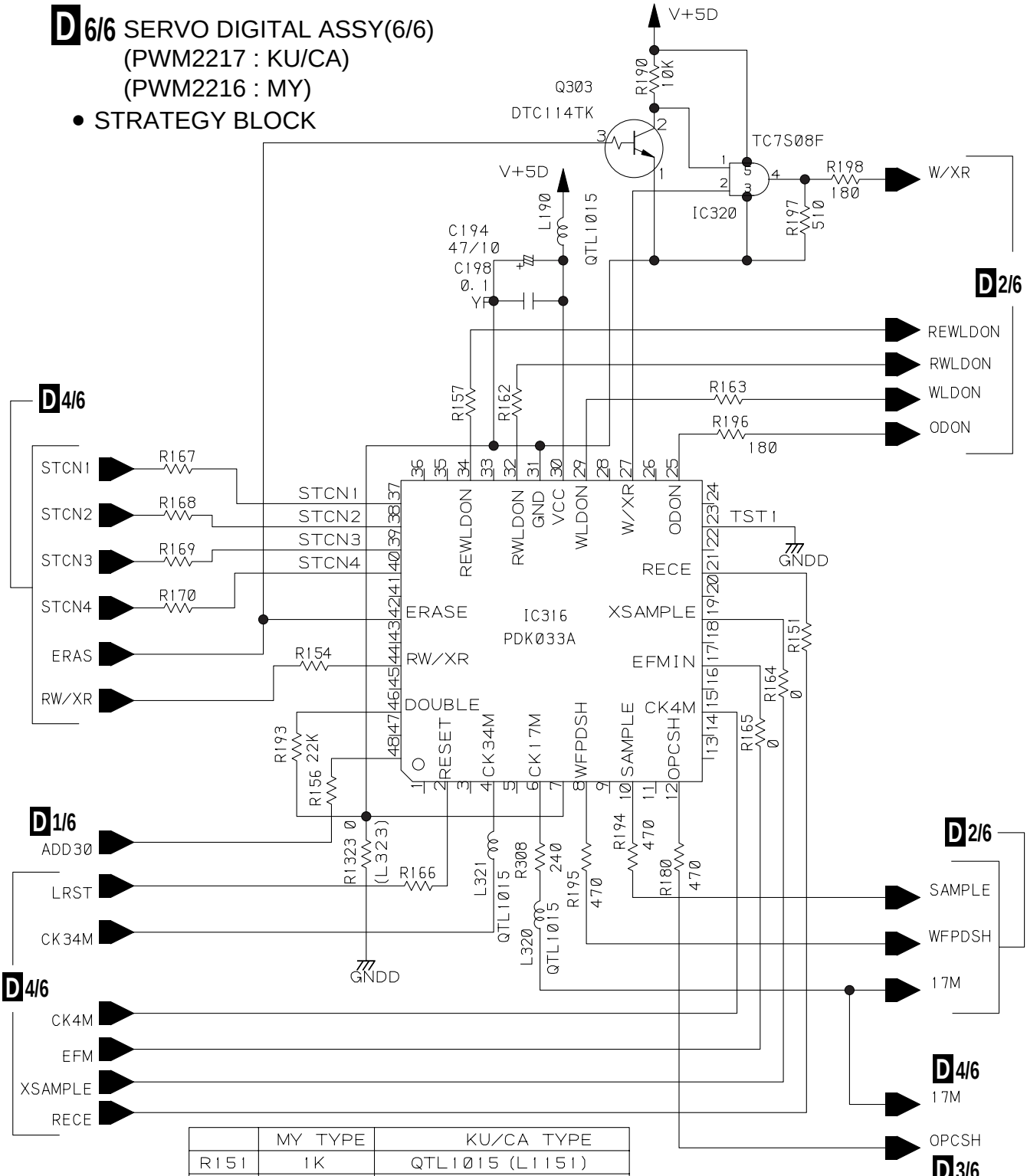
- DECODER BLOCK


IC353
CXD2585Q
CN354
(TP201)
(B6P-SHF-1AA)
CN351
(TP202)
(B5P-SHF-1AA)
CN355
52147-0610
Q351
DTA124EK
L351
QTL1015
L352
QTL1015
R1354 0 : KU/CA
L354 QTL1015 : MY
R1353 0 : KU/CA
L353 QTL1015 : MY
COMP
TRAY
TOCPOS
LOUT
LIN
FOK
SCOR
SCLK
SENS
CLOK
XLAT
DATA
LRST
SQCK
SQSO
MCKDEC
CDBCK
CDDATA
CDLRCK
CDTX
V+5D
V+5A
V+U
GNDD
GNDA
GNDDF
GNDU
D 1/6
D 4/6
H J21
D 5/6

3.7 SERVO DIGITAL ASSY(6/6)

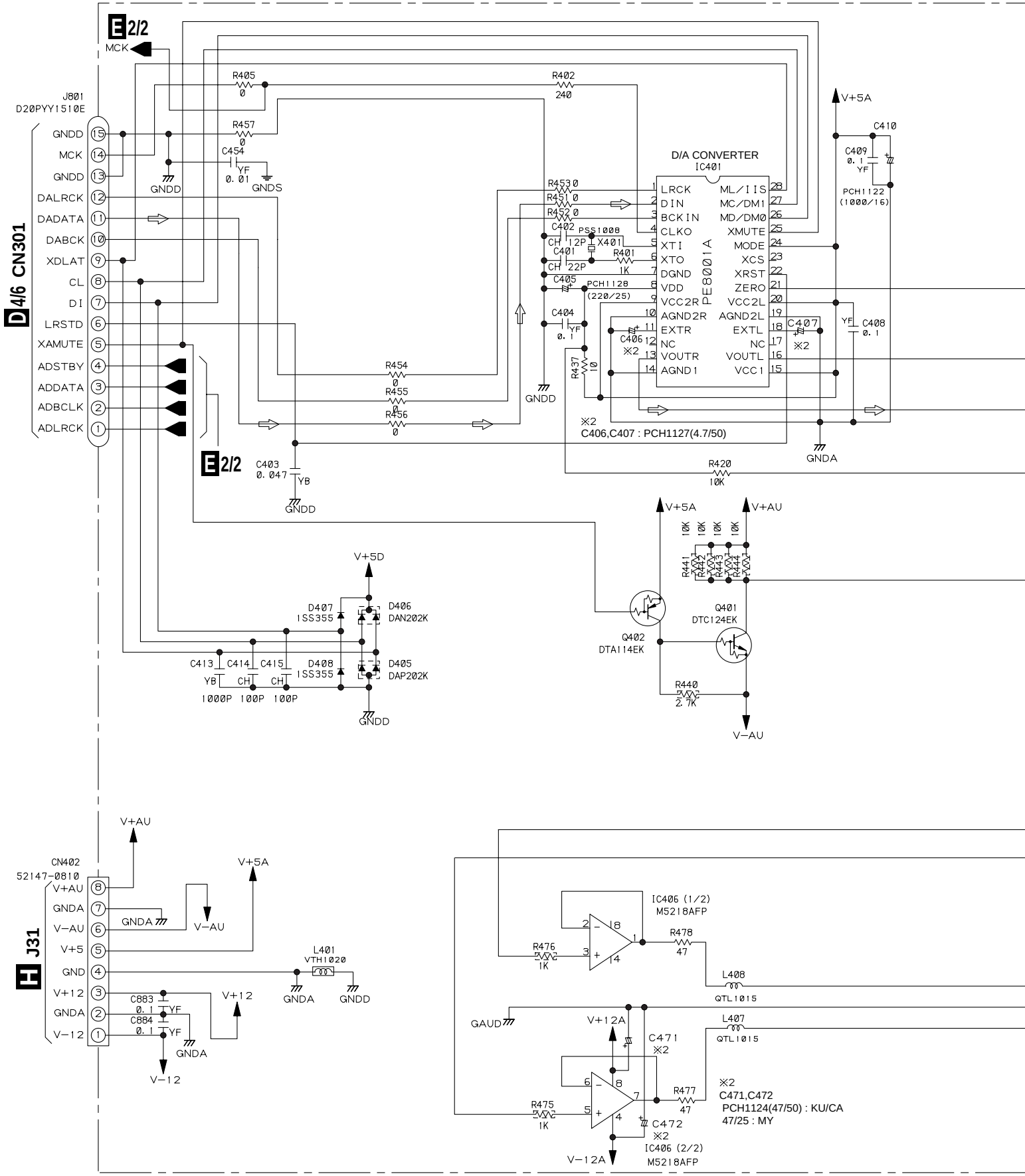
D 6/6 SERVO DIGITAL ASSY(6/6)
(PWM2217 : KU/CA)
(PWM2216 : MY)

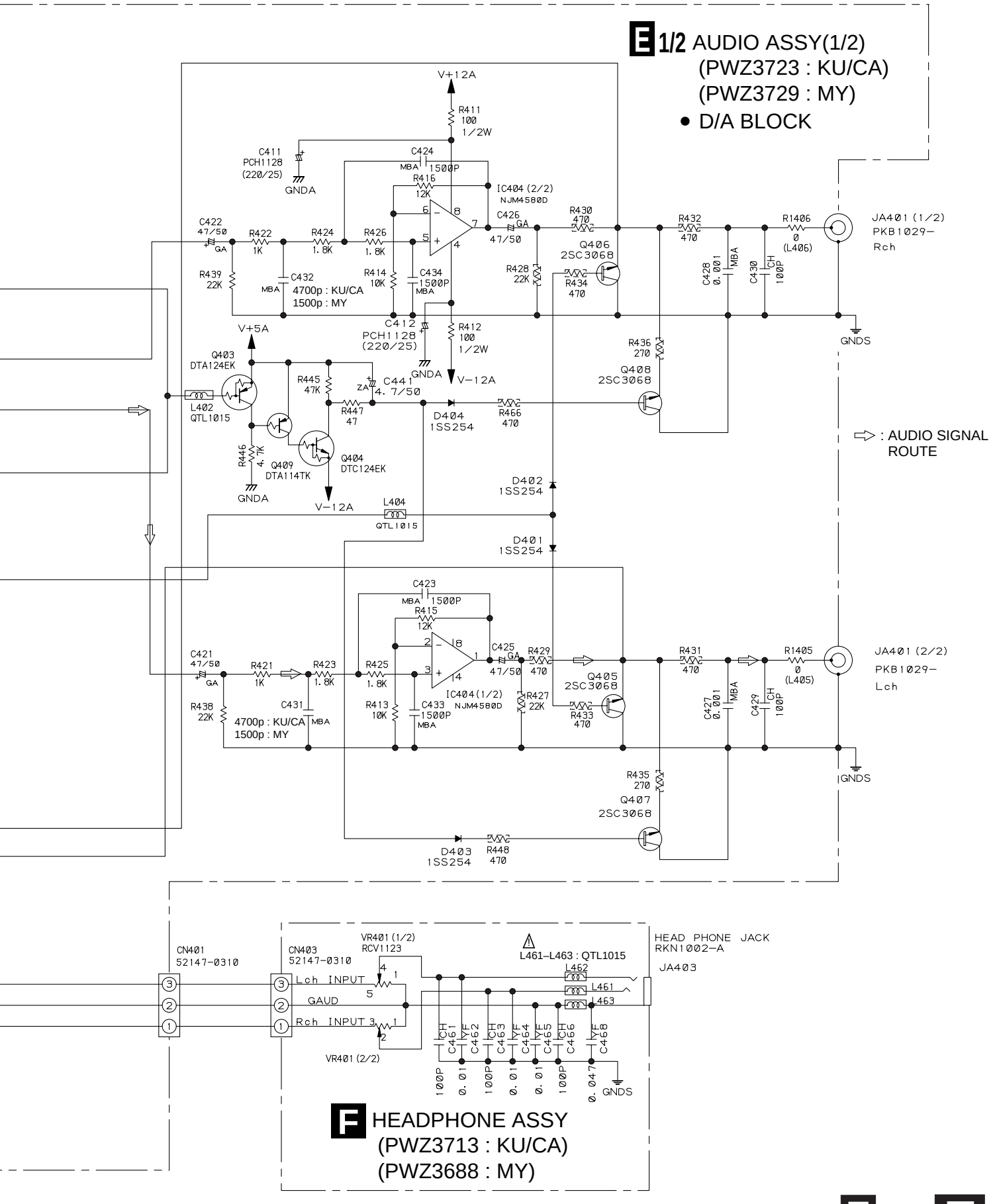
- STRATEGY BLOCK



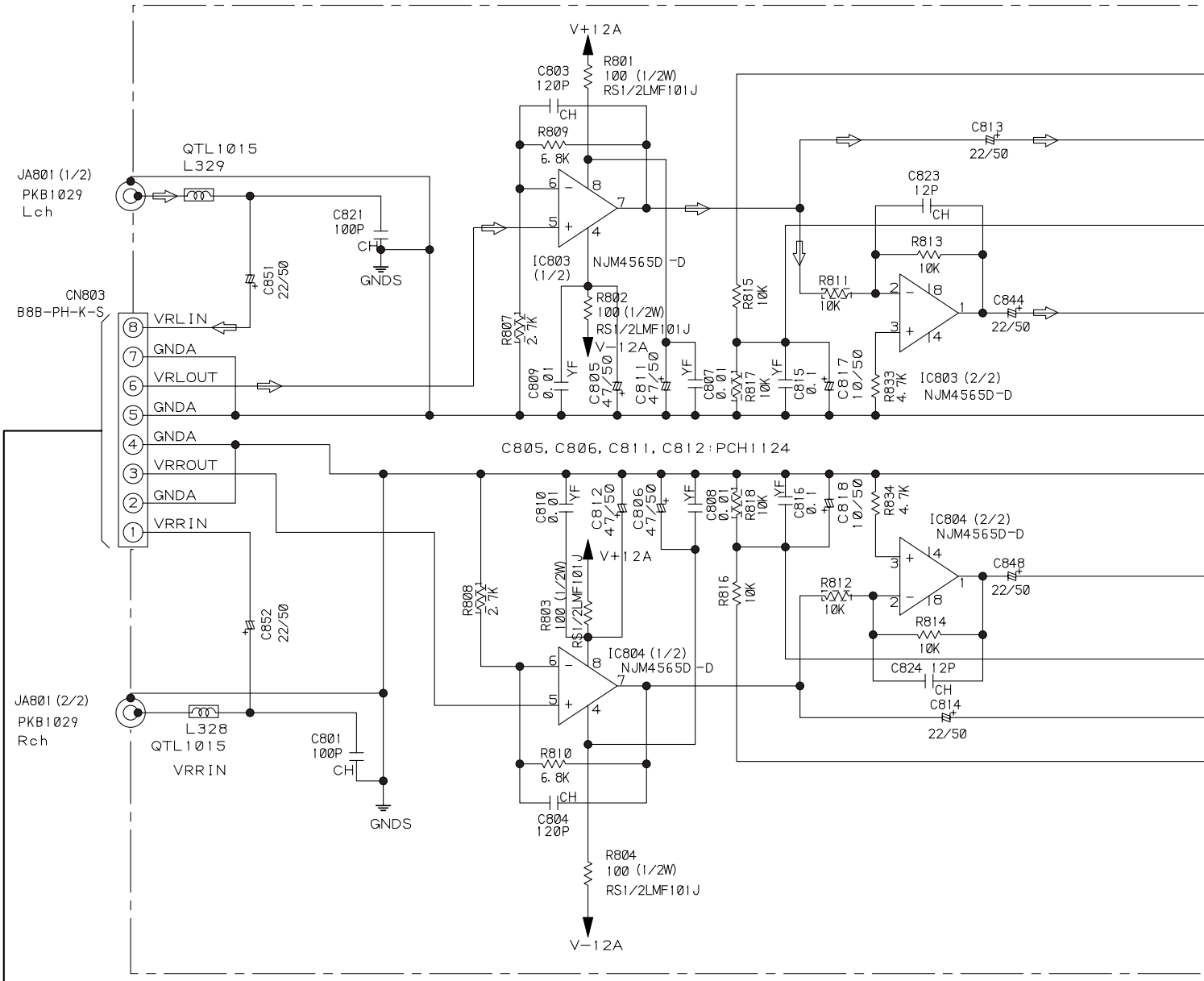
	MY TYPE	KU/CA TYPE
R151	1K	QTL1015 (L1151)
R154	1K	QTL1015 (L1154)
R156	1K	QTL1015 (L1156)
R157	1K	QTL1015 (L1157)
R162	1K	QTL1015 (L1162)
R163	1K	QTL1015 (L1163)
R166	1K	QTL1015 (L1166)
R167	1K	QTL1015 (L1167)
R168	1K	QTL1015 (L1168)
R169	1K	QTL1015 (L1169)
R170	1K	QTL1015 (L1170)

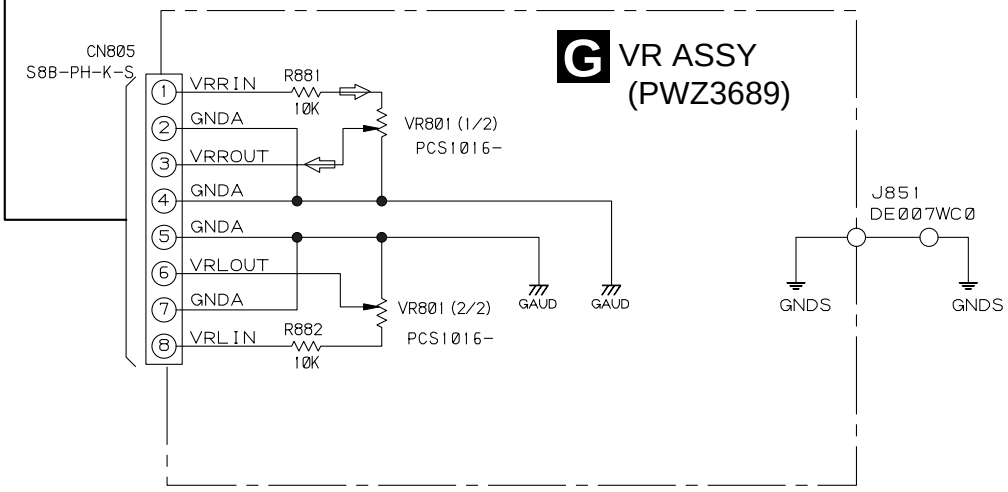
3.8 AUDIO(1/2) and HEADPHONE ASSEMBLIES

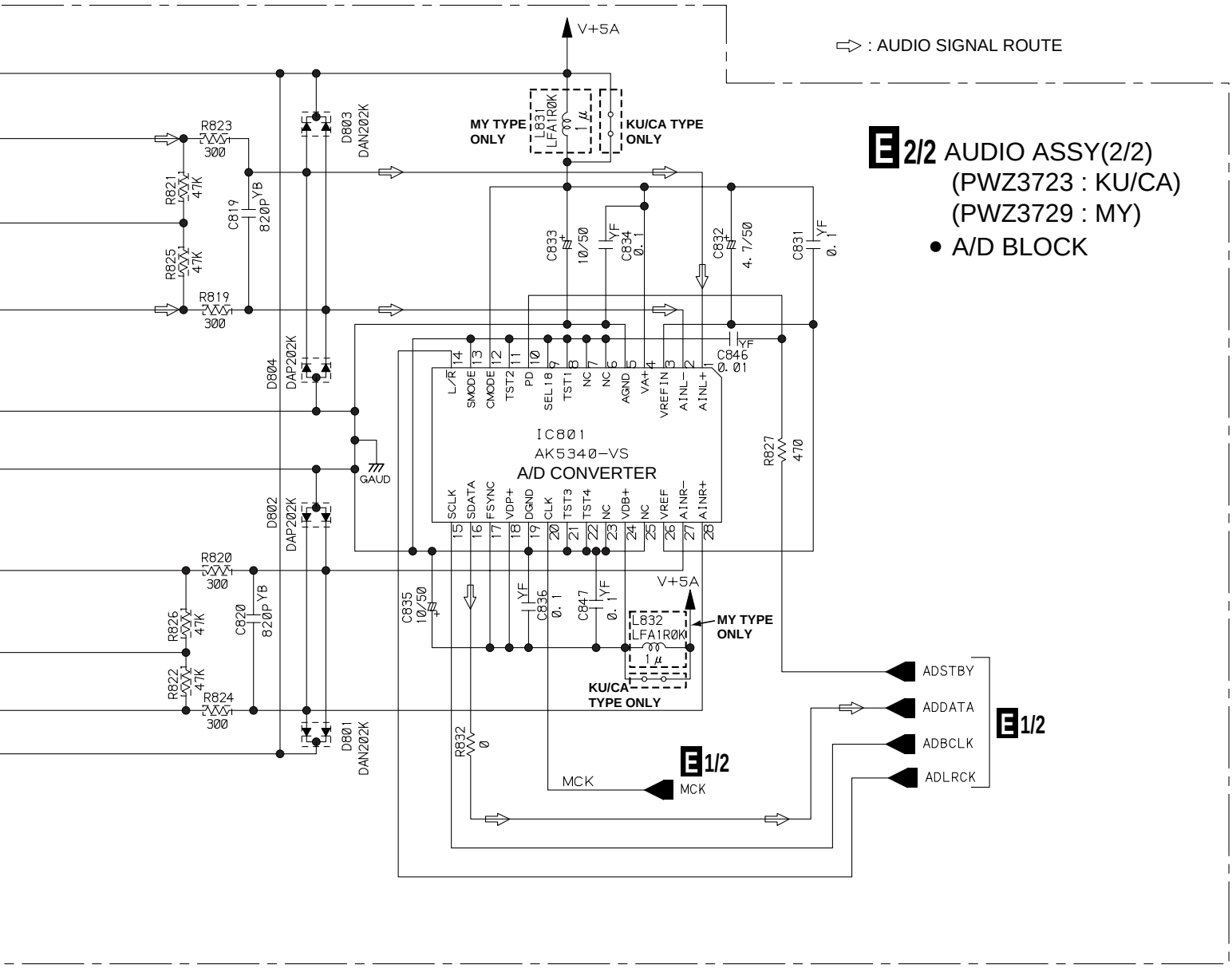



E 1/2 AUDIO ASSY(1/2)
(PWZ3723 : KU/CA)
(PWZ3729 : MY)
• D/A BLOCK
V+12A
R411 100 1/2W
C411 PCH1128 (220/25)
GNDA
C424 MBA 1500P
R416 12K
IC404 (2/2) NJM4580D
C422 47/50 GA
R422 1K
R424 1.8K
R426 1.8K
C425 GA 47/50
R430 470
R432 470
R1406 0 (L406)
JA401 (1/2) PKB1029-Rch
R439 22K
C432 MBA 4700p : KU/CA 1500p : MY
R414 10K
C434 1500P MBA
R428 22K
Q406 2SC3068
R434 470
C428 0.001 MBA
C430 CH 100P
GNDS
V+5A
C412 PCH1128 (220/25)
R412 100 1/2W
GNDA
V-12A
Q403 DTA124EK
L402 QTL1015
R445 47K
C441 ZA 4.7/50
R447 47
D404 1SS254
R466 470
R436 270
Q408 2SC3068
R446 4.7K
Q409 DTA114TK
Q404 DTC124EK
D402 1SS254
L404 QTL1015
D401 1SS254
: AUDIO SIGNAL ROUTE
C423 MBA 1500P
R415 12K
C421 47/50 GA
R421 1K
R423 1.8K
R425 1.8K
C425 GA 47/50
R429 470
R431 470
R1405 0 (L405)
JA401 (2/2) PKB1029-Lch
IC404(1/2) NJM4580D
R438 22K
C431 MBA 4700p : KU/CA 1500p : MY
R413 10K
C433 1500P MBA
R427 22K
Q405 2SC3068
R433 470
C427 0.001 MBA
C429 CH 100P
GNDS
R435 270
Q407 2SC3068
D403 1SS254
R448 470
CN401 52147-0310
CN403 52147-0310
VR401 (1/2) RCV1123
L461–L463 : QTL1015
HEAD PHONE JACK RKN1002-A
JA403
Lch INPUT
GAUD
Rch INPUT
VR401 (2/2)
L462
L461
L463
C461 CH 100P
C462 YF 0.01
C463 CH 100P
C464 YF 0.01
C465 YF 0.01
C466 CH 100P
C468 YF 0.047
GNDS
F HEADPHONE ASSY
(PWZ3713 : KU/CA)
(PWZ3688 : MY)

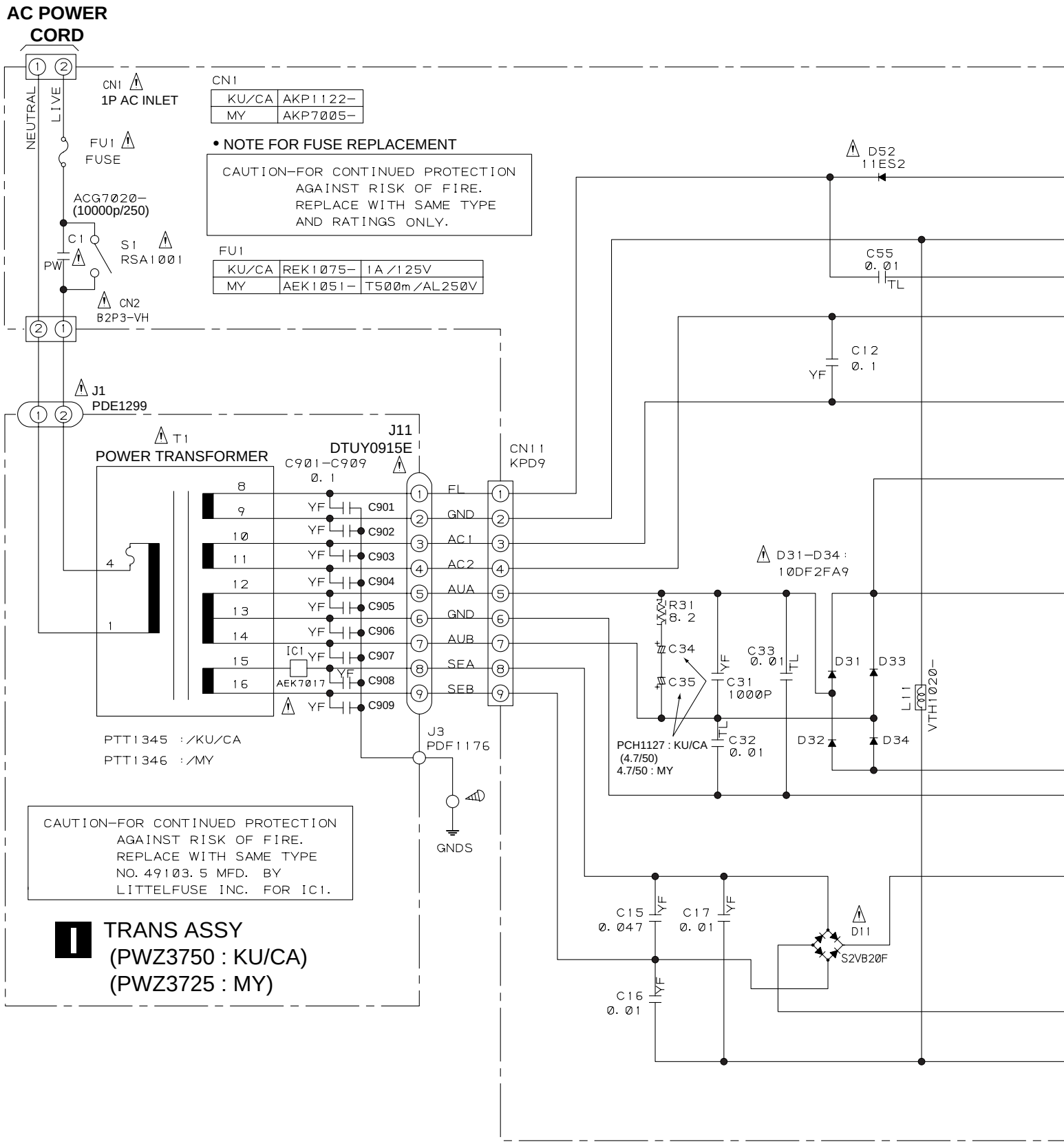
3.9 AUDIO(2/2) and VR ASSEMBLIES

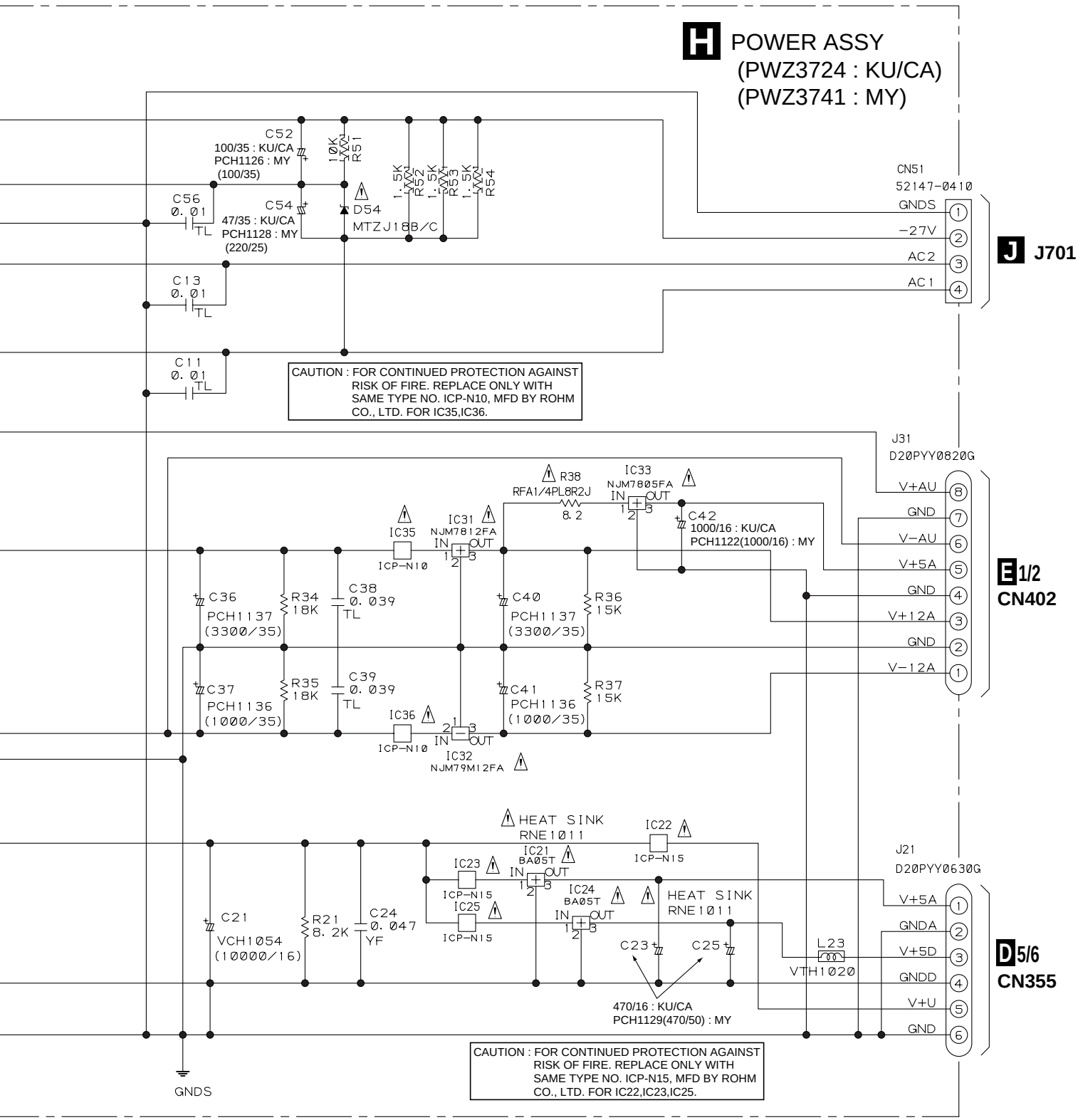




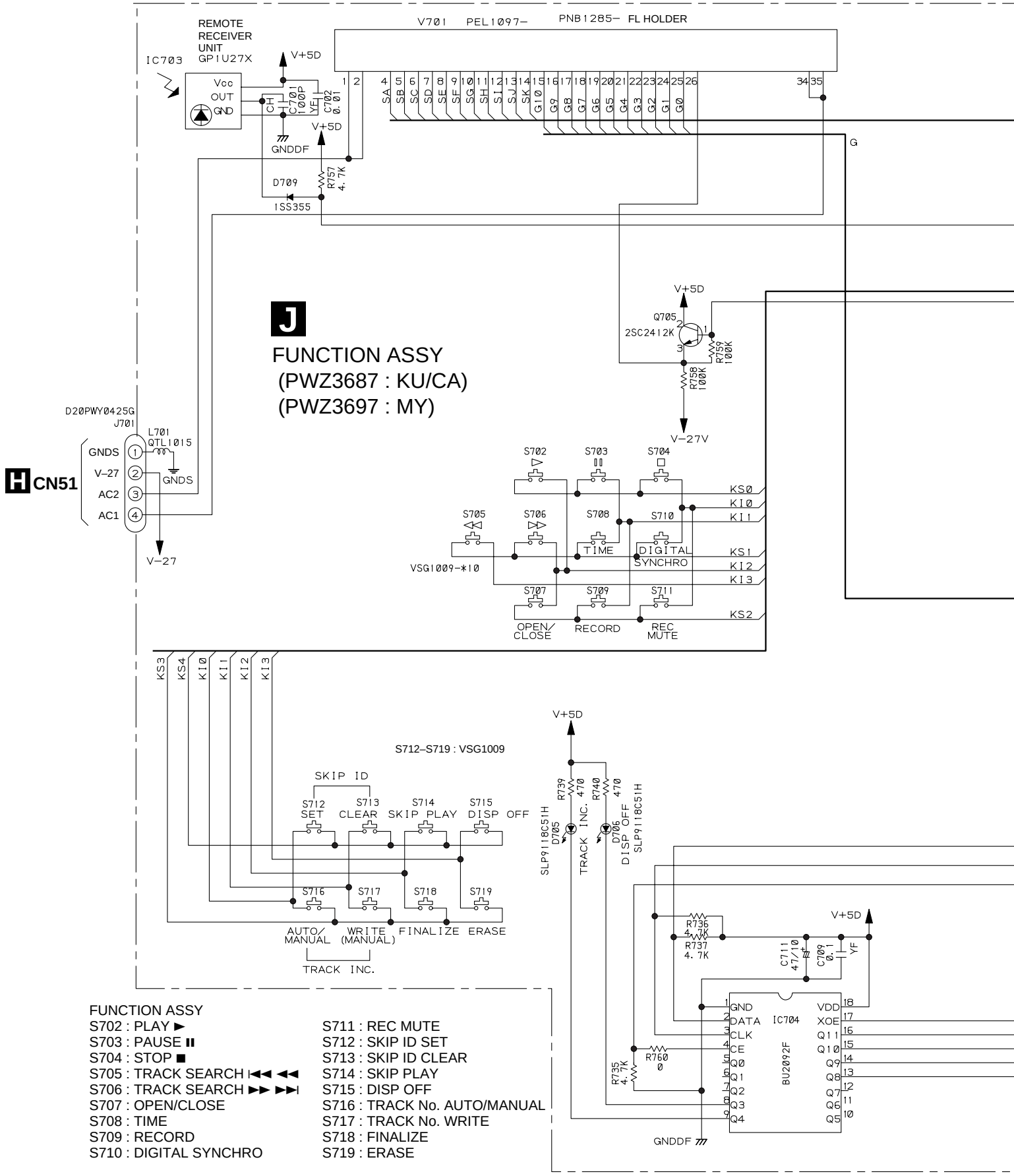

⇨ : AUDIO SIGNAL ROUTE
E 2/2 AUDIO ASSY(2/2)
(PWZ3723 : KU/CA)
(PWZ3729 : MY)
• A/D BLOCK
V+5A
MY TYPE ONLY
KU/CA TYPE ONLY
L831 LFA1R0K 1μ
R823 300
R821 47K
R825 47K
R819 300
C819 820P YB
C833 10/50
C834 0.1 YF
C832 4.7/50
C831 0.1 YF
C846 0.01 YF
D803 DAN202K
D804 DAP202K
D802 DAP202K
D801 DAN202K
IC801
AK5340-VS
A/D CONVERTER
L/R SMODE CMODE TST2 PD SEL18 TST1 NC NC AGND VA+ VREFIN AINL- AINL+
SCLK SDATA FSYNC VDP+ DGND CLK TST3 TST4 NC VDB+ NC VREF AINR- AINR+
15 16 17 18 19 20 21 22 23 24 25 26 27 28
GAUD
R827 470
R820 300
R826 47K
R822 47K
R824 300
C820 820P YB
C835 10/50
C836 0.1 YF
C847 0.1 YF
L832 LFA1R0K 1μ
MY TYPE ONLY
KU/CA TYPE ONLY
R832 0
MCK
E 1/2
ADSTBY
ADDATA
ADBCLK
ADLRCK
E 1/2

3.10 POWER and TRANS ASSEMBLIES



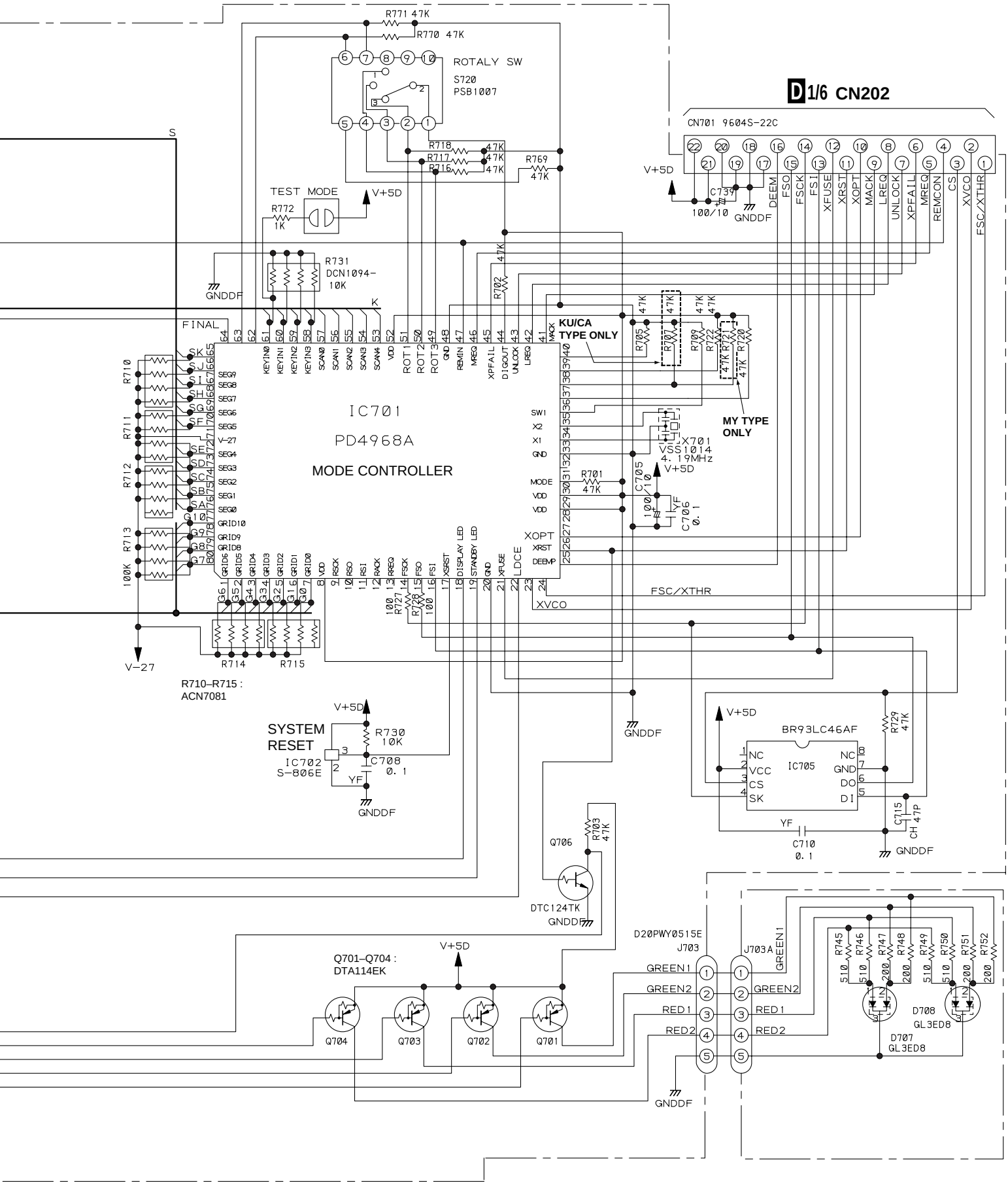

H POWER ASSY
(PWZ3724 : KU/CA)
(PWZ3741 : MY)
C52
100/35 : KU/CA
PCH1126 : MY
(100/35)
C56
0.01
TL
C54
47/35 : KU/CA
PCH1128 : MY
(220/25)
D54
MTZJ18B/C
10K 1/4W R51
1.5K 1/4W R52
1.5K 1/4W R53
1.5K 1/4W R54
C13
0.01
TL
C11
0.01
TL
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. ICP-N10, MFD BY ROHM CO., LTD. FOR IC35,IC36.
CN51
52147-0410
GNDS 1
-27V 2
AC2 3
AC1 4
J J701
J31
D20PYY0820G
V+AU 8
GND 7
V-AU 6
V+5A 5
GND 4
V+12A 3
GND 2
V-12A 1
E 1/2
CN402
R38
RFA1/4PL8R2J
8.2
IC33
NJM7805FA
IC35
NJM7812FA
ICP-N10
C42
1000/16 : KU/CA
PCH1122(1000/16) : MY
C36
PCH1137
(3300/35)
R34
18K
C38
0.039
TL
C40
PCH1137
(3300/35)
R36
15K
C37
PCH1136
(1000/35)
R35
18K
C39
0.039
TL
C41
PCH1136
(1000/35)
R37
15K
IC36
ICP-N10
IC32
NJM79M12FA
HEAT SINK
RNE1011
IC22
ICP-N15
IC21
BA05T
IC23
ICP-N15
IC24
BA05T
IC25
ICP-N15
HEAT SINK
RNE1011
C21
VCH1054
(10000/16)
R21
8.2K
C24
0.047
YF
C23
C25
470/16 : KU/CA
PCH1129(470/50) : MY
L23
VTH1020
J21
D20PYY0630G
V+5A 1
GNDA 2
V+5D 3
GNDD 4
V+U 5
GND 6
D 5/6
CN355
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. ICP-N15, MFD BY ROHM CO., LTD. FOR IC22,IC23,IC25.
GNDS

3.11 FUNCTION ASSY



FUNCTION ASSY

S702 : PLAY ►
S703 : PAUSE ❚❚
S704 : STOP ■
S705 : TRACK SEARCH |◄◄ ◄◄
S706 : TRACK SEARCH ►► ►►|
S707 : OPEN/CLOSE
S708 : TIME
S709 : RECORD
S710 : DIGITAL SYNCHRO
S711 : REC MUTE
S712 : SKIP ID SET
S713 : SKIP ID CLEAR
S714 : SKIP PLAY
S715 : DISP OFF
S716 : TRACK No. AUTO/MANUAL
S717 : TRACK No. WRITE
S718 : FINALIZE
S719 : ERASE


D 1/6 CN202
CN701 9604S-22C
ROTALY SW
S720
PSB1007
TEST MODE
R731
DCN1094-
10K
FINAL
KU/CA
TYPE ONLY
MY TYPE
ONLY
IC701
PD4968A
MODE CONTROLLER
X701
VSS1014
4.19MHz
FSC/XTHR
XVCO
V-27
R710–R715 :
ACN7081
SYSTEM
RESET
IC702
S-806E
BR93LC46AF
IC705
Q706
DTC124TK
Q701–Q704 :
DTA114EK
D20PWY0515E
J703
J703A
GREEN1
GREEN2
RED1
RED2
D708
GL3ED8
D707
GL3ED8
GNDDF
V+5D

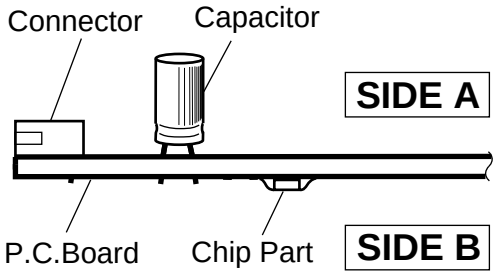
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

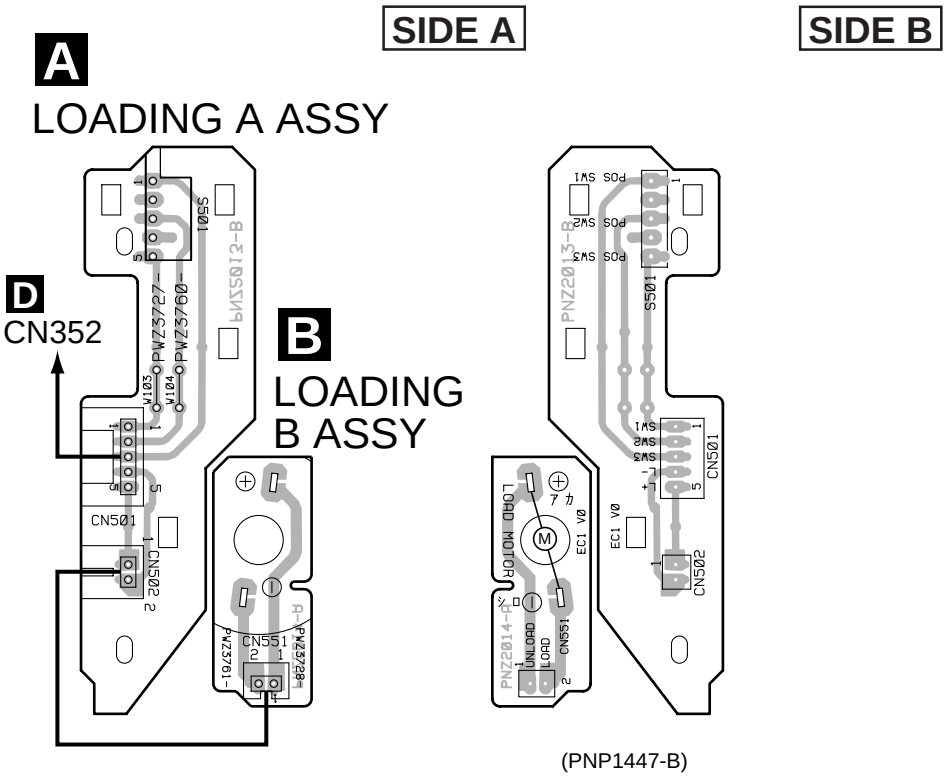
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

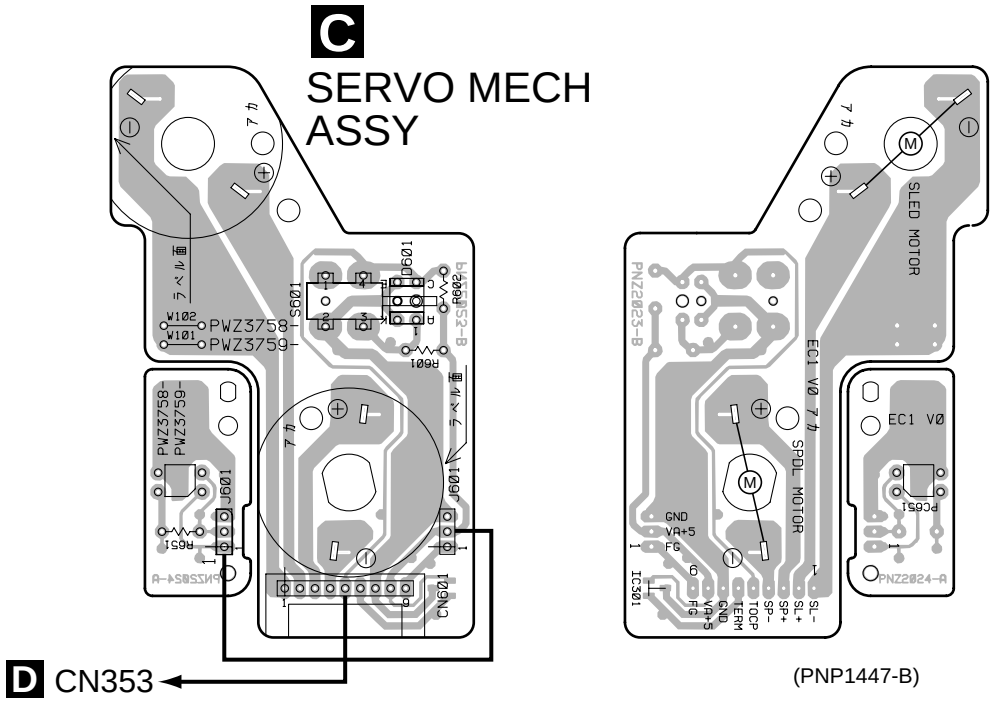
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
B C E	B C E B C E	Transistor
B C E	B C E B C E	Transistor with resistor
D G S	D G S D G S	Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.

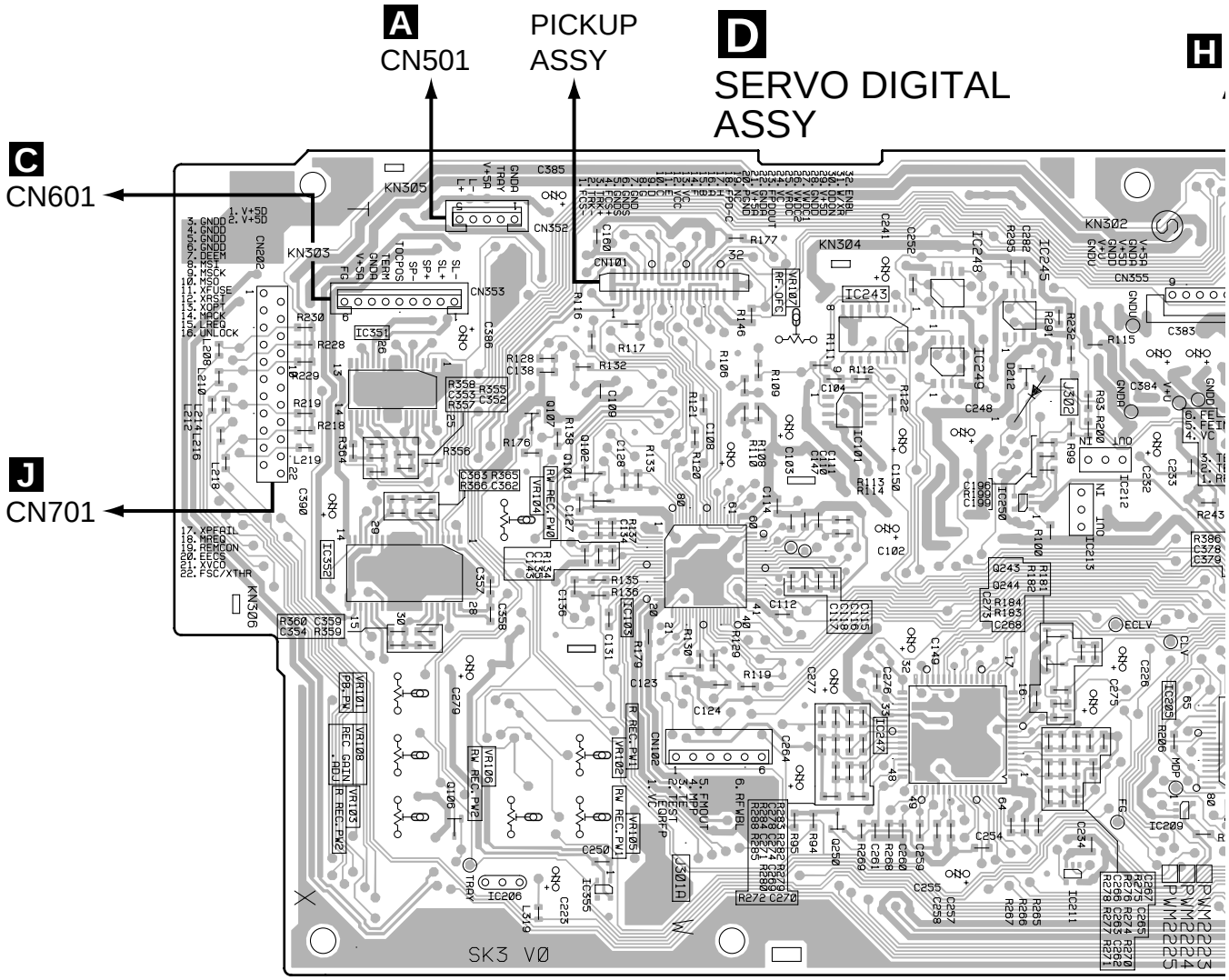


4.1 LOADING A, LOADING B and SERVO MECH ASSEMBLIES





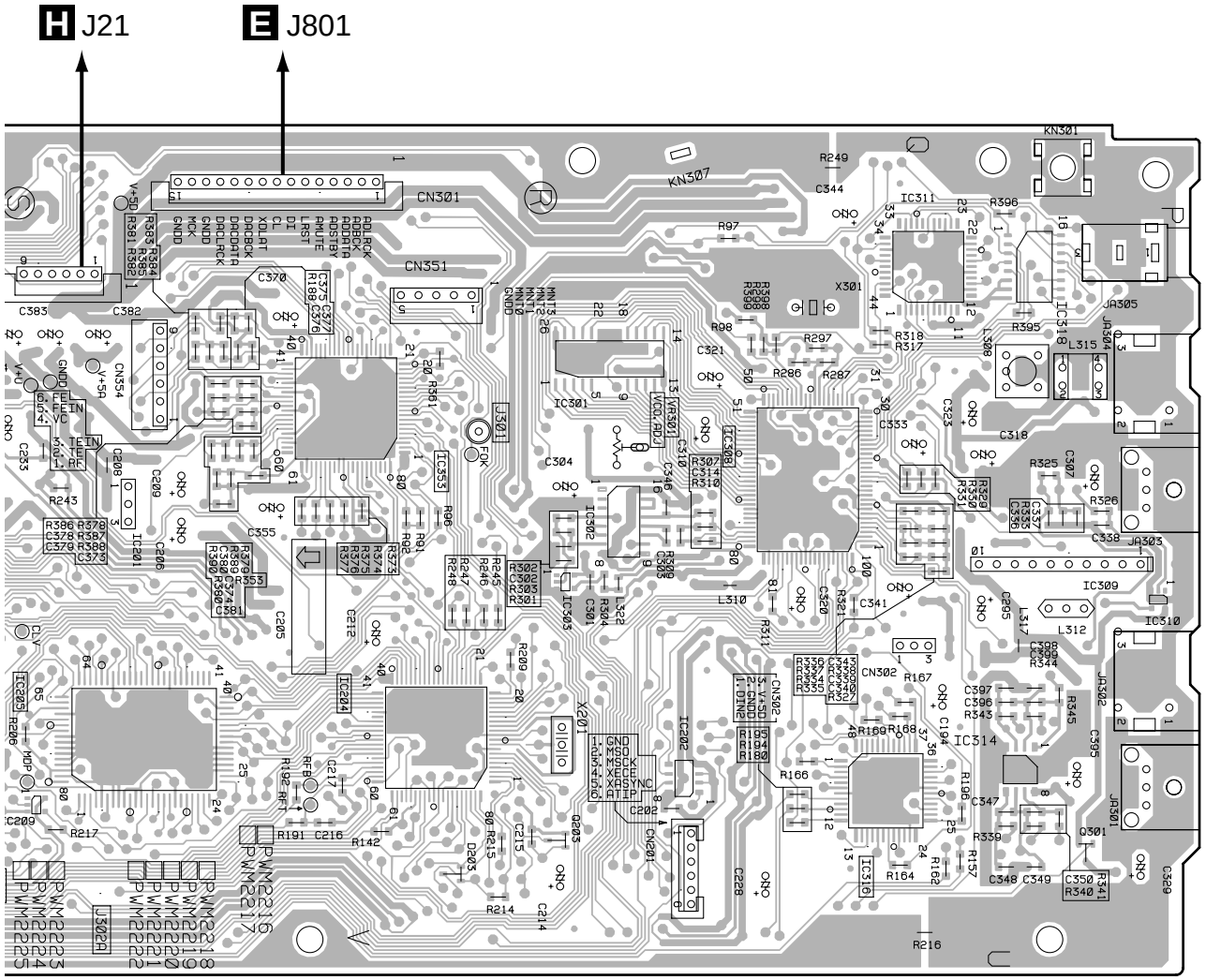
4.2 SERVO DIGITAL ASSY



VR101
VR108
VR103
VR104
VR106
VR102
VR105
VR107

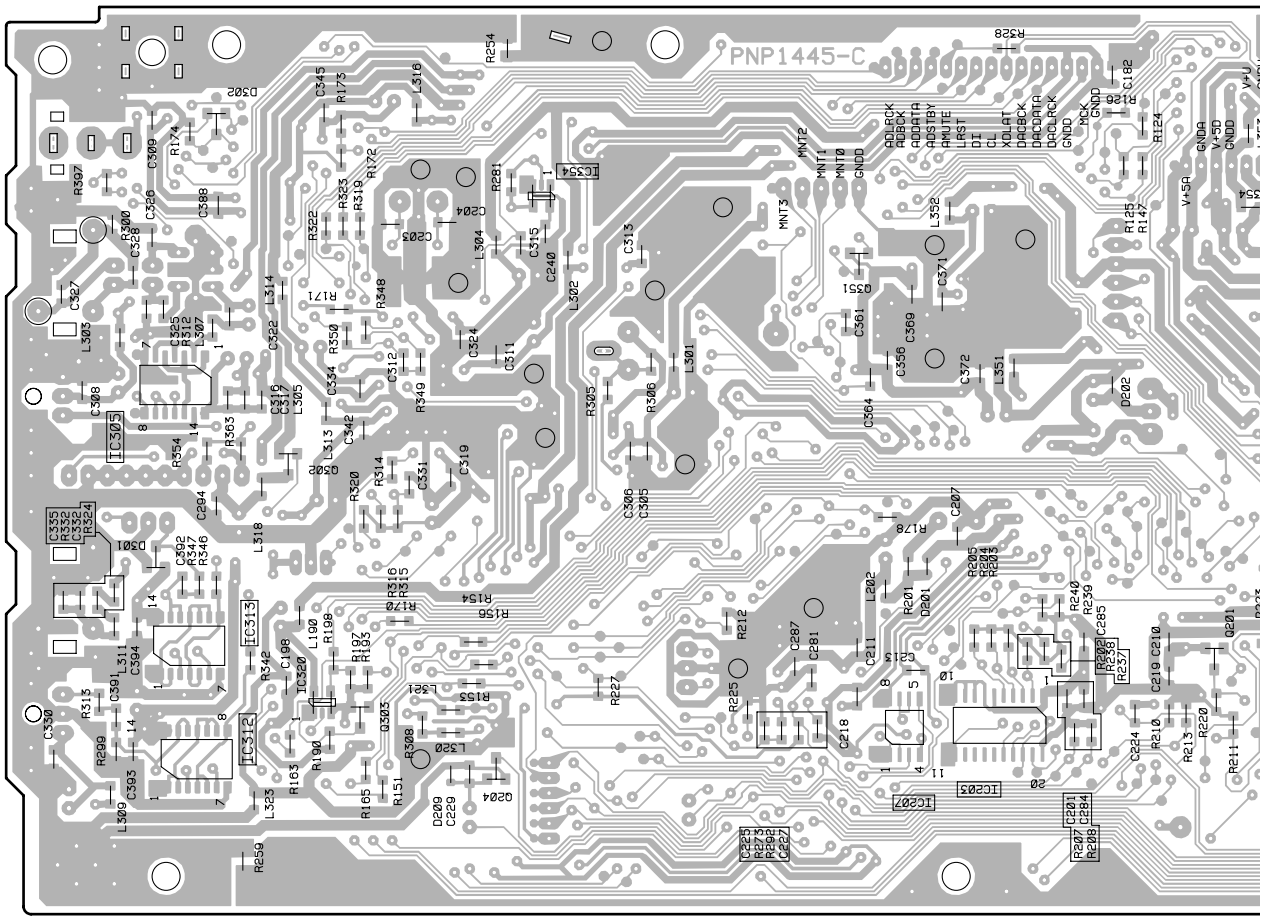
IC351
IC352
Q106
IC206
Q107
Q102
Q101
IC355
IC103
IC243
IC101
Q250
IC248
IC249
IC247
IC245
IC250
Q243
Q244
IC211
IC212
IC213
IC209

SIDE A


H J21
E J801
CN301
CN351
KN301
KN307
IC301
IC302
IC303
IC308
IC311
IC318
IC309
IC310
IC314
IC316
IC353
IC201
IC202
IC204
IC205
IC209
Q203
Q301
VR301

(PNP1445-C)

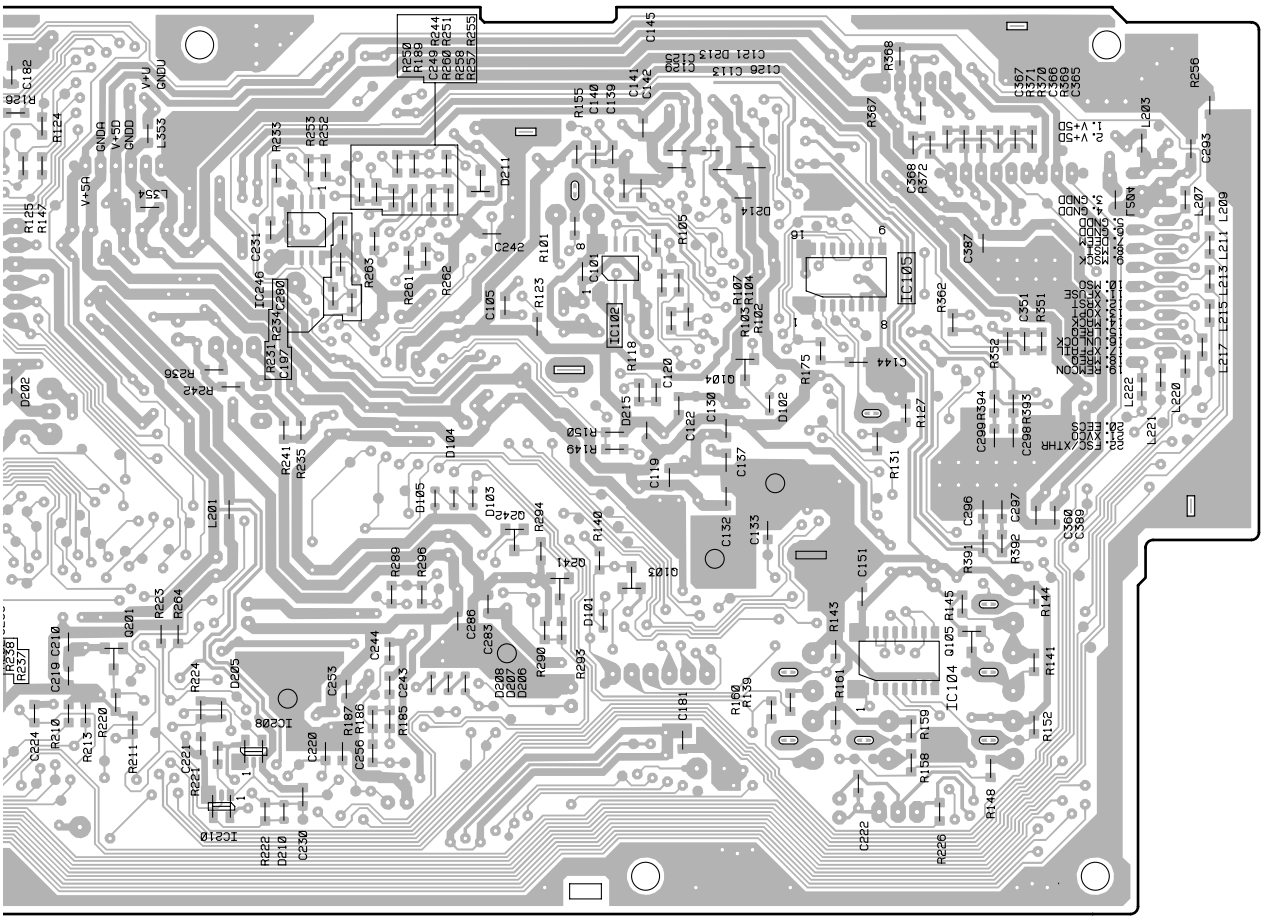
D SERVO DIGITAL ASSY



(PNP1445-C)

IC305 Q302 IC354 Q351
IC313 IC320 Q303 Q201
IC312 Q204 IC207 IC203

SIDE B

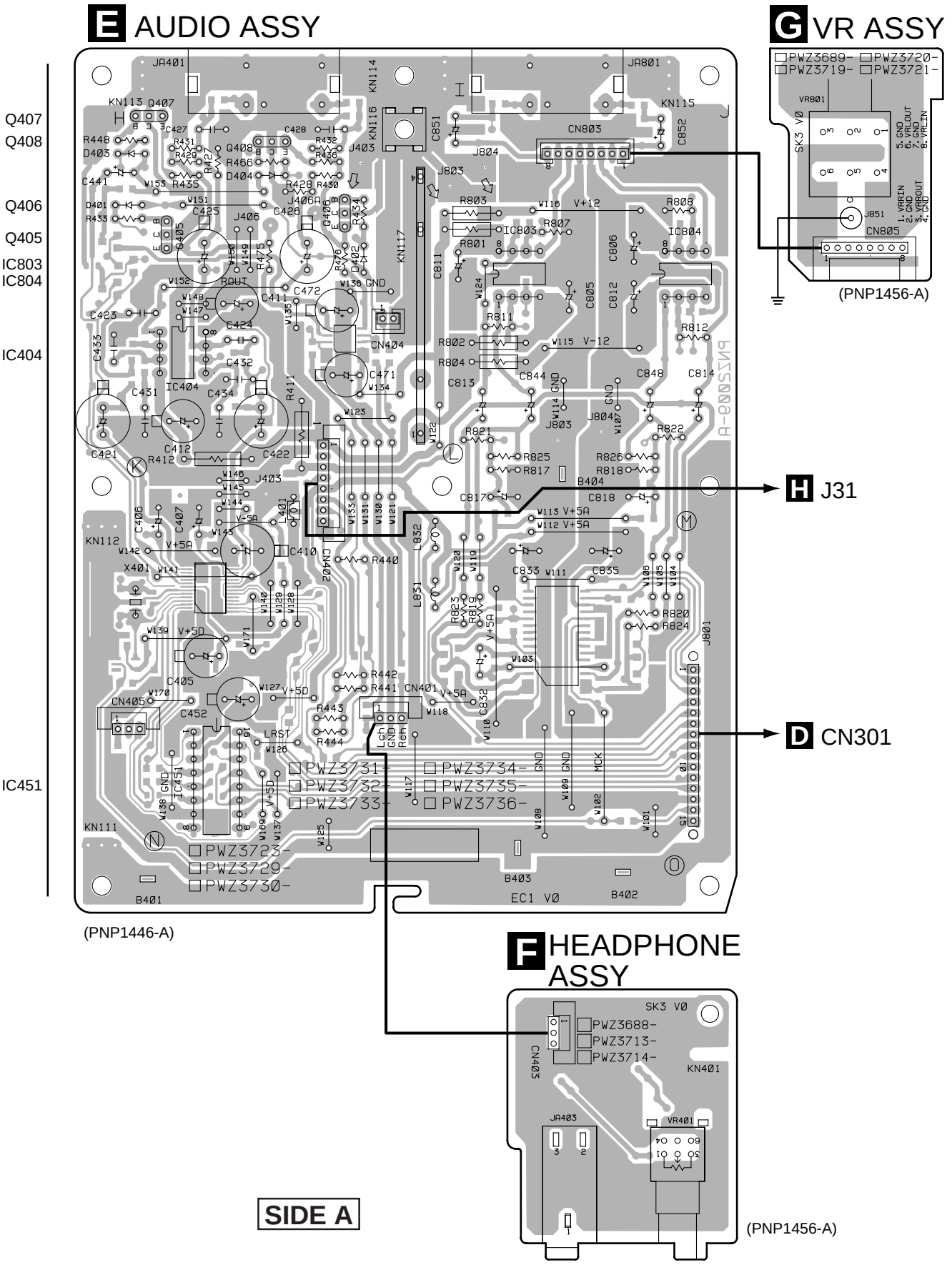


IC246 Q242 IC105

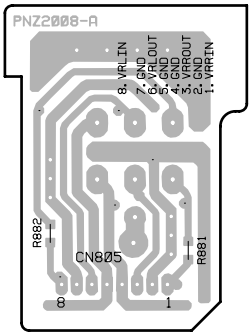
Q201 Q241 IC102 Q104 IC104 Q105

IC210 IC208 Q103

4.3 AUDIO, HEADPHONE and VR ASSEMBLIES

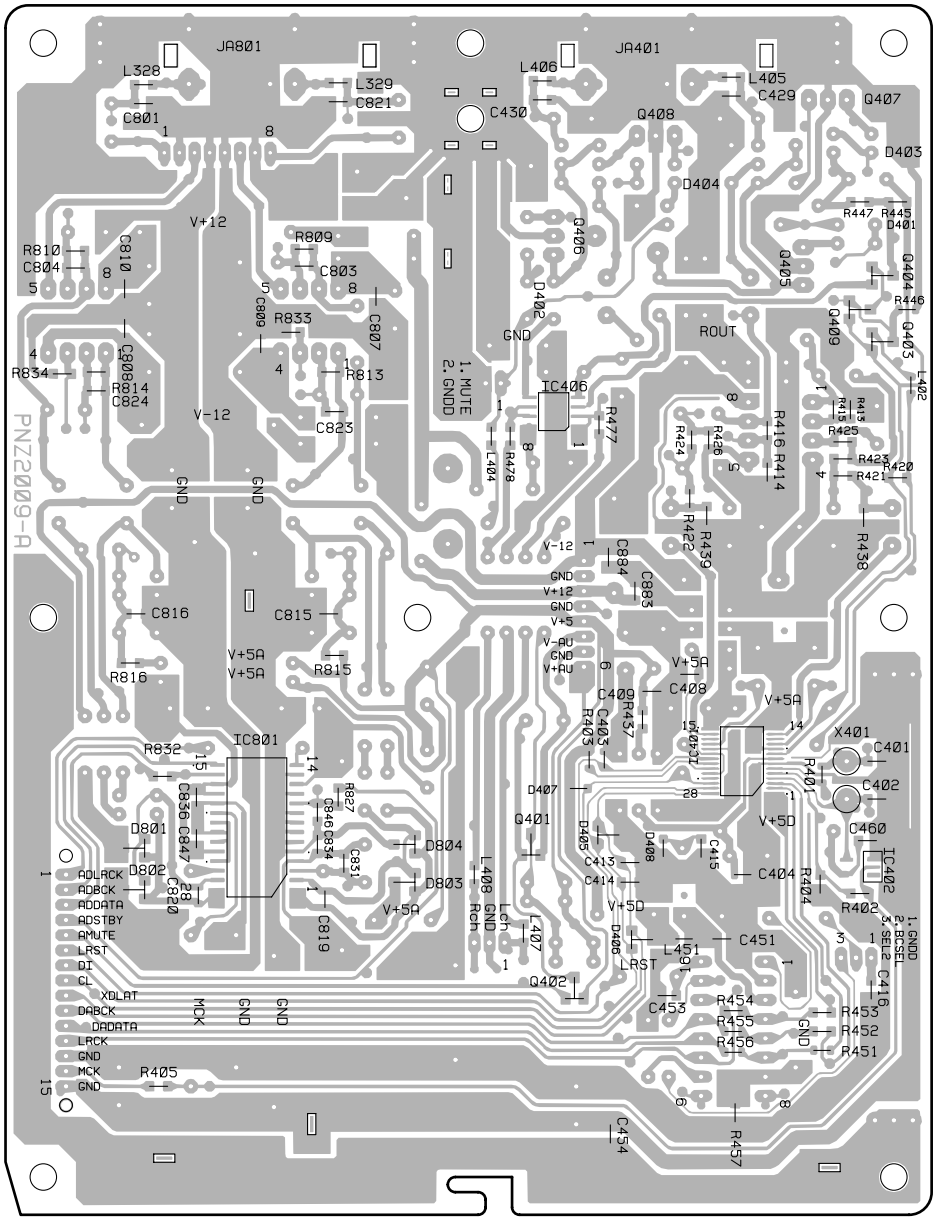


G VR ASSY



(PNP1456-A)

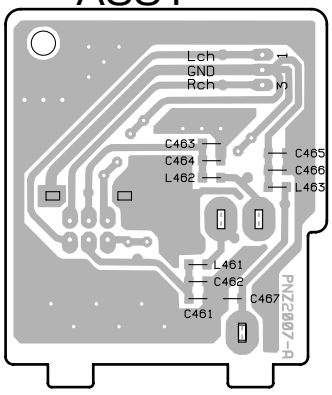
E AUDIO ASSY



(PNP1446-A)

Q404
Q409
Q403
IC406
IC401
IC801
Q401
IC402
Q402

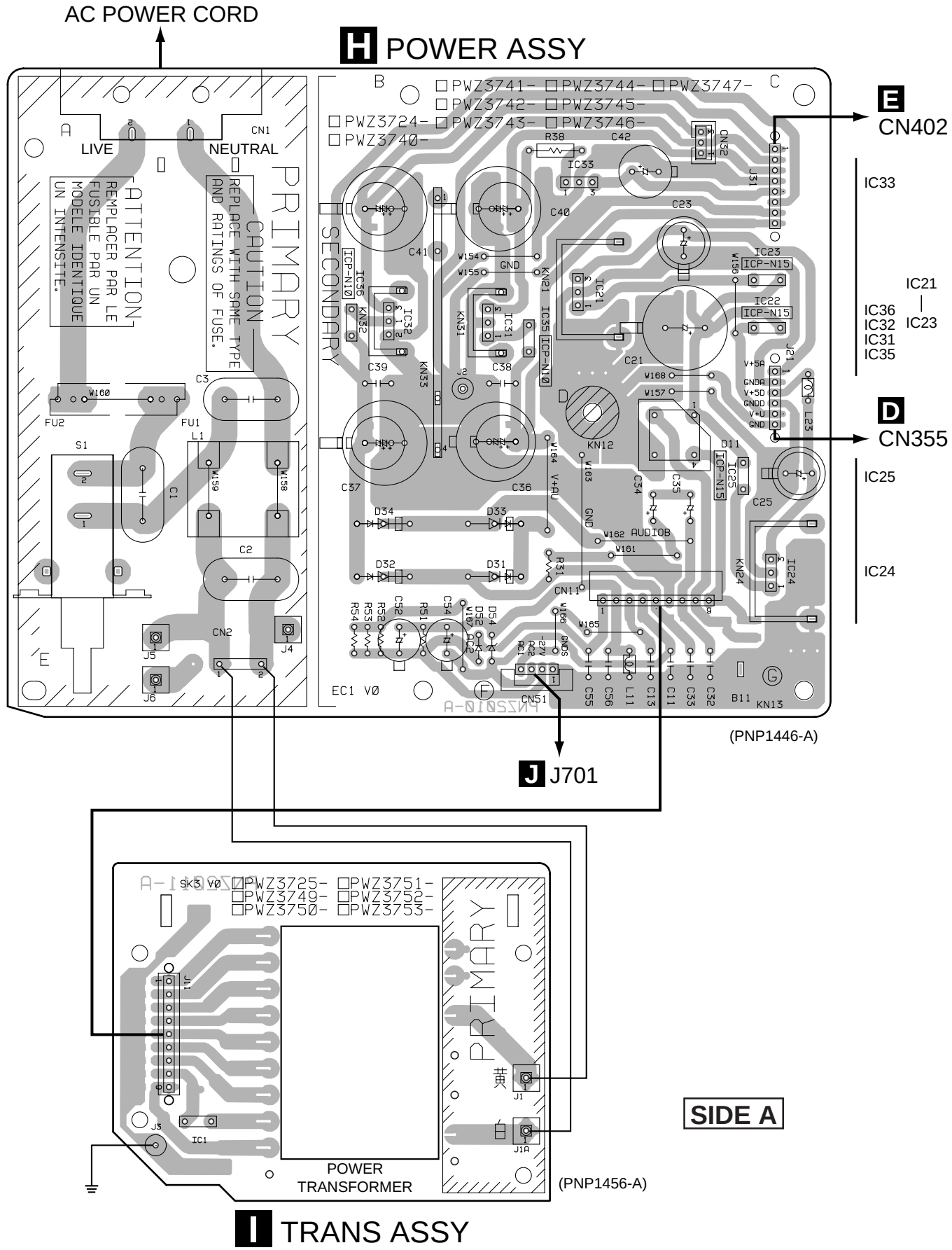
F HEADPHONE ASSY



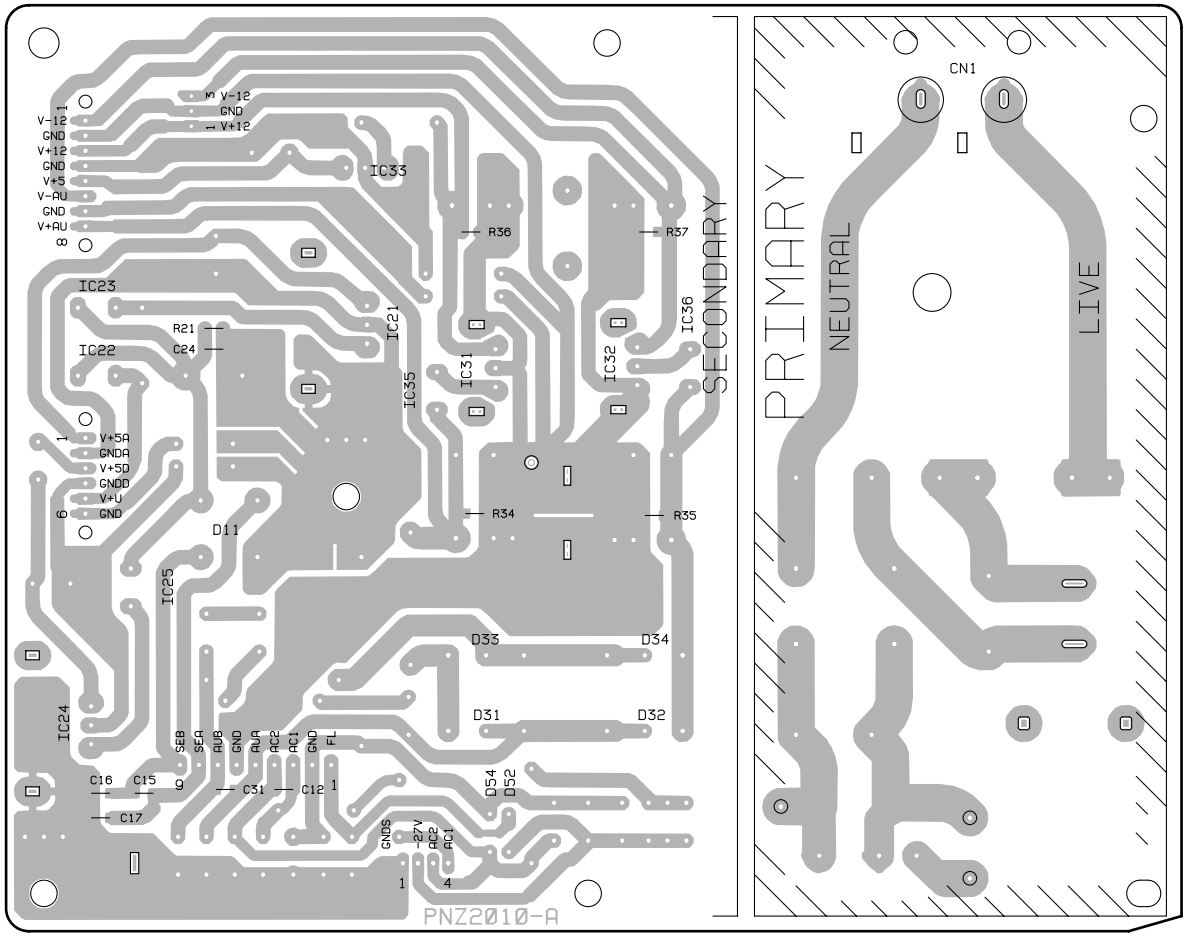
(PNP1456-A)

SIDE B

4.4 POWER and TRANS ASSEMBLIES

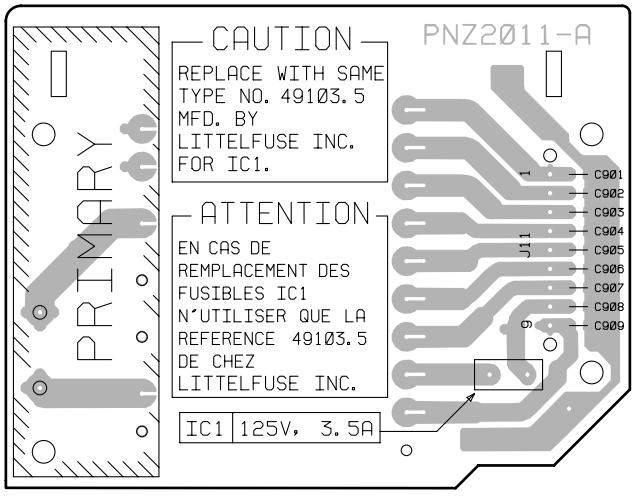


H POWER ASSY



(PNP1446-A)

I TRANS ASSY

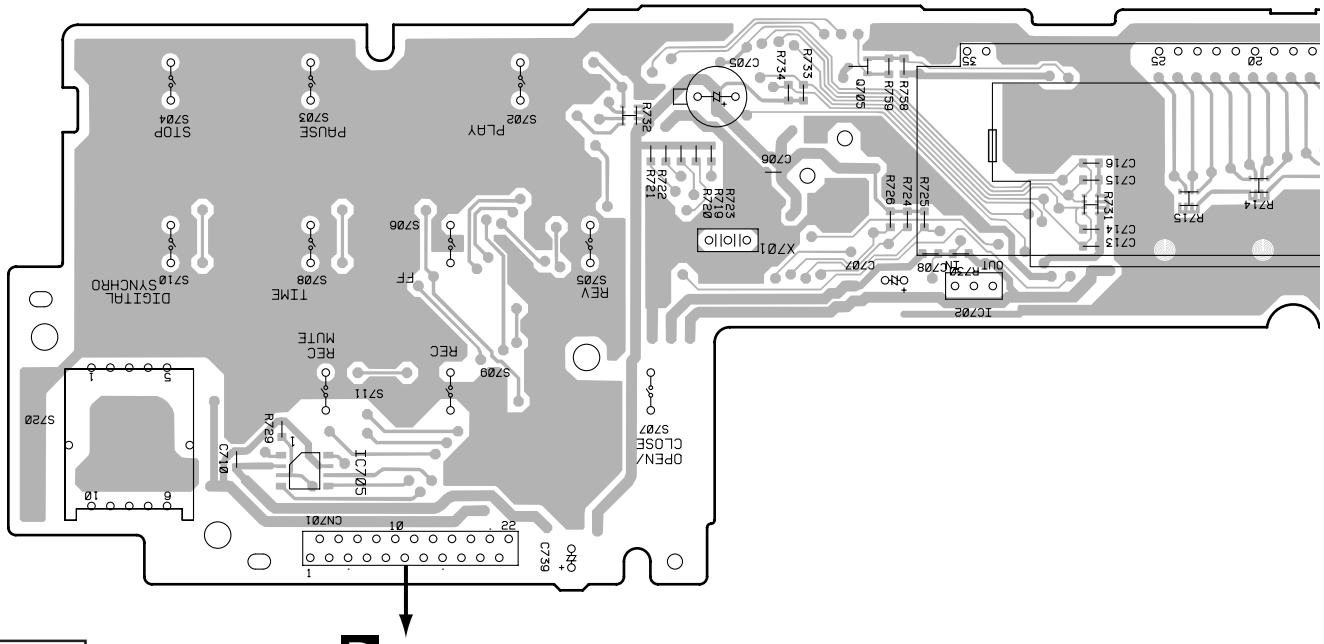


SIDE B

(PNP1456-A)

4.5 FUNCTION ASSY

J FUNCTION ASSY

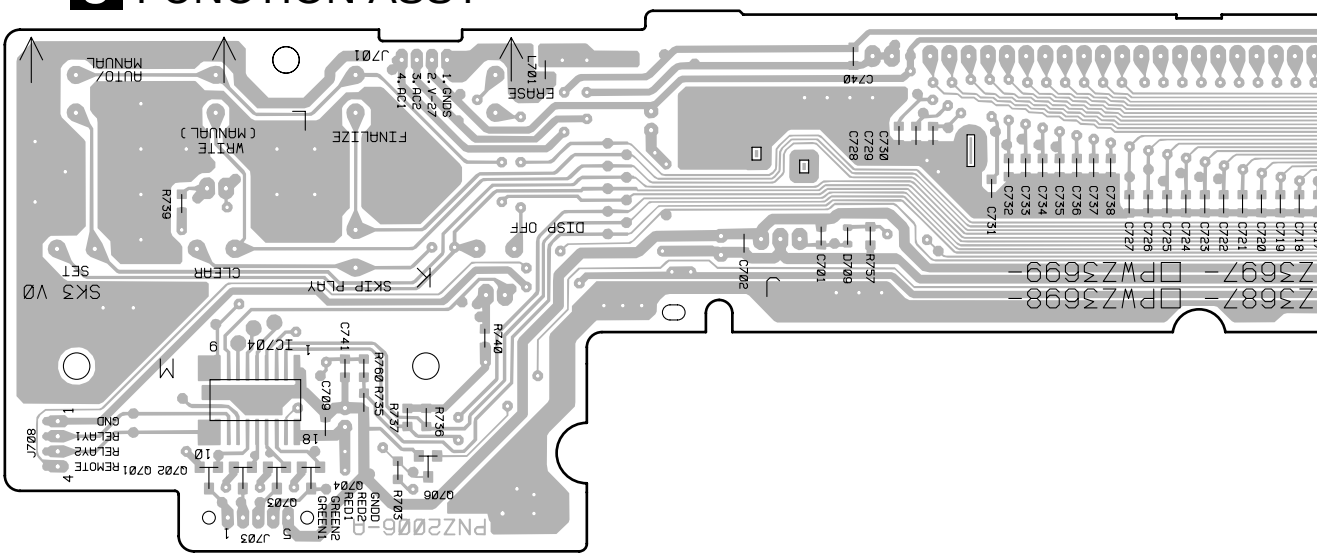


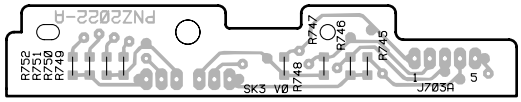
SIDE A

D CN202

IC705 Q705 IC702

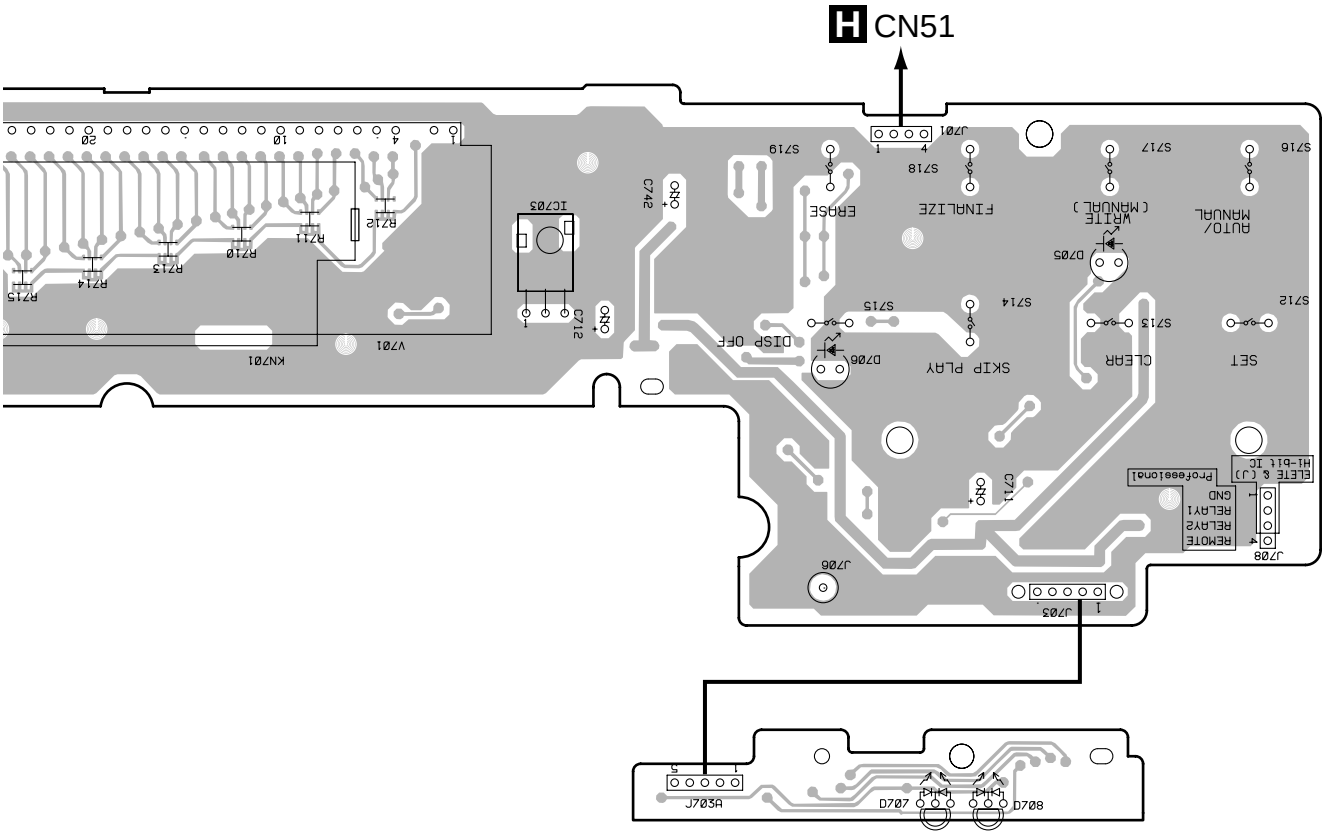
J FUNCTION ASSY

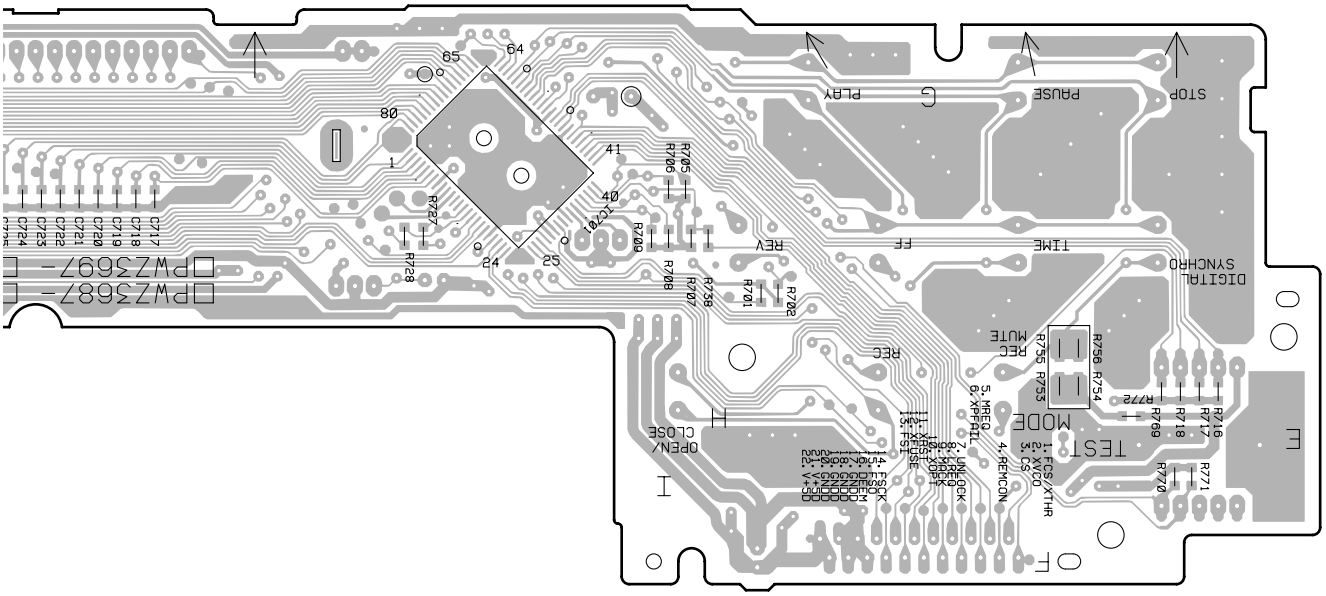




SIDE B

IC704
Q701 — Q704 Q706





(PNP1456-A)

IC701

5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
560 Ω → 56×10^1 → 561 ..... RD1/4PU 5 6 1 J
47k Ω → 47×10^3 → 473 ..... RD1/4PU 4 7 3 J
0.5 Ω → R50 ..... RN2H R 5 0 K
1 Ω → 1R0 ..... RS1P 1 R 0 K
Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).
5.62k Ω → 562×10^1 → 5621 ..... RN1/4PC 5 6 2 1 F

■ LIST OF WHOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No.		Remarks
		KU/CA Type	MY Type	
NSP	SERVO MECH ASSY	PWX1569	PWX1569	
NSP	├─LOADING A ASSY	PWZ3727	PWZ3727	
NSP	├─LOADING B ASSY	PWZ3728	PWZ3728	
NSP	└─SERVO MECH ASSY	PWZ3758	PWZ3758	
⚠	SERVO DIGITAL ASSY	PWM2217	PWM2216	
NSP	POWER AUDIO ASSY	PWX1558	PWX1559	
	├─AUDIO ASSY	PWZ3723	PWZ3729	
⚠	└─POWER ASSY	PWZ3724	PWZ3741	
NSP	FUNCTION ASSY	PWX1591	PWX1592	
NSP	├─FUNCTION ASSY	PWZ3687	PWZ3697	
	├─HEADPHONE ASSY	PWZ3713	PWZ3688	
	├─VR ASSY	PWZ3689	PWZ3689	
	└─TRANS ASSY	PWZ3750	PWZ3725	

Mark	No.	Description	Part No.
A		**LOADING A ASSY**	
		SWITCH	
	S501		VSK1011
		OTHERS	
	CN502	KR CONNECTOR	S2B-PH-K-S
	CN501	KR CONNECTOR	S5B-PH-K-S
B		**LOADING B ASSY**	
		OTHERS	
	CN551	KR CONNECTOR	B2B-PH-K-S

Mark	No.	Description	Part No.
C		**SERVO MECH ASSY**	
		SEMICONDUCTOR	
	PC651		NJL5803K-F1
		SWITCH	
	S601		PSG1013
		RESISTORS	
	All Resistors		RD1/4PU□□□J
		OTHERS	
	J601	3P JUMPER WIRE	D20PWW0305E
	CN601	KR CONNECTOR	S9B-PH-K-S

Mark	No.	Description	Part No.

D SERVO DIGITAL ASSY

(1) CONTRAST TABLE

PWM2217 and PWM2216 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		PWM2217	PWM2216	
	L305,L310,L353,L354	Not used	QTL1015	
	L1097,L1151,L1154, L1156,L1157,L1162, L1163,L1166-L1171	QTL1015	Not used	
	R97,R171,R1182	Not used	RS1/10S0R0J	
	R151,R154,R156,R157, R162,R163,R166-R170	Not used	RS1/10S102J	
	R1305,R1310,R1353, R1354	RS1/10S0R0J	Not used	

(2)PARTS LIST FOR PWM2217

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC311		AD1893JST
	IC103		AK8563
	IC201		BA05T
	IC351		BA5912AFP-Y
	IC352		BA5932FP
	IC302		BA7082F
	IC353		CXD2585Q
	IC104,IC105,IC243		HD74HC4053FP
	IC203		HD74HC573FP
	IC308		LC89585
	IC301		LH64256CK-70
⚠	IC212		LP2950CZ-5.0(NS)
	IC245		M5238AFP
	IC102		MC34072D
	IC246		NJM2100M
	IC250		NJM2107F
	IC101		NJM2136M
	IC207,IC248,IC249,IC314		NJM2904M
	IC247		PA9004A
	IC204		PD4956B
	IC205		PDJ014A
	IC316		PDK033A
	IC206		PST994C
	IC202		TC4W53F
	IC312,IC313		TC74HC00AF
	IC305		TC74HCU04AF
	IC210		TC7S00F
	IC208,IC303		TC7S04F
	IC320		TC7S08F
	IC209,IC211,IC310		TC7S14F
	IC354		TC7SU04F
	IC355		TK11041M-1
	Q102,Q301		DTA114TK
	Q242,Q351		DTA124EK
	Q103,Q104,Q241,Q243,Q244		DTC114TK
	Q303		DTC114TK
	Q101,Q107,Q201,Q203,Q204		DTC124EK
	D101,D103-D105,D201,D202		1SS355
	D205-D210,D214,D215		1SS355
	D211,D301		DA204K
	D302		DAN202K
	D203		DAP202K
	D102		MA700
	D212		MA704

Mark	No.	Description	Part No.

COILS

Mark	No.	Description	Part No.
	L209		OTL1040
	L308	PULSE TRANS.	PTL1003
⚠	L315	CHOKE COIL	PTL1017
⚠	L312	EMI FILTER	PTL1019
	L1097,L1151,L1154,L1156,L1157	CHIP SOLID INDUCTOR	QTL1015
	L1162,L1163,L1166-L1171,L190	CHIP SOLID INDUCTOR	QTL1015
	L201,L202,L211-L222	CHIP SOLID INDUCTOR	QTL1015
	L301-L304,L307,L309	CHIP SOLID INDUCTOR	QTL1015
⚠	L311	CHIP SOLID INDUCTOR	QTL1015
	L313,L314,L317,L320,L321	CHIP SOLID INDUCTOR	QTL1015
	L351,L352	CHIP SOLID INDUCTOR	QTL1015

CAPACITORS

Mark	No.	Description	Part No.
	C120		CCSQCH100D50
	C306,C316,C325,C326,C338		CCSQCH101J50
	C303		CCSQCH160J50
	C350,C375,C399		CCSQCH221J50
	C278		CCSQCH270J50
	C133,C361		CCSQCH331J50
	C336,C337		CCSQCH470J50
	C231,C377		CCSQCH471J50
	C134		CCSQCH6R0D50
	C104		CCSQCJ3R0C50
	C328		CCSQSL561J50
	C232,C307,C318,C329		CEAT100M50
	C103		CEAT101M10
	C102,C150,C382-C384,C386		CEAT101M16
	C390		CEAT101M16
	C214,C255		CEAT1R0M50
	C206,C212		CEAT221M6R3
	C264,C277		CEAT2R2M50
	C323		CEAT330M25
	C223		CEAT3R3M50
	C108,C194,C395		CEAT470M10
	C149,C209,C226,C241,C248		CEAT470M16
	C275,C279,C304,C310		CEAT470M16
	C320,C321,C333,C341,C344		CEAT470M16
	C355,C370,C385		CEAT470M16
	C228		CEAT4R7M50
	C141,C142,C196,C197,C254		CKSQYB102K50
	C266,C331,C335,C340,C347		CKSQYB102K50
	C351,C364,C376,C396		CKSQYB102K50
	C112,C123,C124,C222		CKSQYB103K50
	C243,C244,C282,C296-C299		CKSQYB103K50
	C315,C322,C332,C343,C346		CKSQYB103K50
	C365-C368,C373,C391,C392		CKSQYB103K50
	C126,C138,C224,C230,C252		CKSQYB104K25
	C259-C261,C327,C339		CKSQYB104K25
	C115,C127,C131,C249,C314		CKSQYB105K10
	C268,C381		CKSQYB152K50
	C348,C349,C397,C398		CKSQYB222K50
	C140,C262		CKSQYB223K50
	C110,C111,C116-C118,C144		CKSQYB224K16
	C216,C217		CKSQYB224K16
	C281		CKSQYB272K50
	C136,C269-C271,C274		CKSQYB331K50
	C135		CKSQYB333K50
	C128,C256-C258,C276		CKSQYB334K16

Mark	No.	Description	Part No.
	C221,C288,C354,C358,C359		CKSQYB471K50
	C267,C380		CKSQYB473K25
	C143		CKSQYB473K50
	C147,C263,C357,C362,C363		CKSQYB681K50
	C352,C353		CKSQYB682K50
	C265		CKSQYB823K25
	C145,C199,C201,C202		CKSQYF103Z50
	C207,C208,C234,C240,C250		CKSQYF103Z50
	C301,C302		CKSQYF103Z50
	C101,C105,C109,C113,C121		CKSQYF104Z25
	C125,C129,C139,C151,C160		CKSQYF104Z25
	C198,C210,C211,C213		CKSQYF104Z25
	C218,C219,C225,C233,C242		CKSQYF104Z25
	C253,C273,C280,C283-C287		CKSQYF104Z25
	C305,C308,C309,C311,C313		CKSQYF104Z25
	C317,C319,C324,C330,C334		CKSQYF104Z25
	C342,C345,C356,C369		CKSQYF104Z25
	C371,C372,C388,C393,C394		CKSQYF104Z25
	C114,C119,C122,C130,C132		CKSQYF105Z16
	C137		CKSQYF105Z16
	C205 (1.0F)		RCH1152

RESISTORS

	R127 (2.2kΩ)		PCN1039
	VR101-VR103,VR105,VR106 (4.7kΩ)		VCP1154
	VR104 (22kΩ)		VCP1158
	Other Resistors		RS1/10S□□□J

OTHERS

	X201	CERAMIC RESONATOR (32MHz)	PSS1023
	CN355	6P JUMPER CONNECTOR	52147-0610
	CN301	15P JUMPER CONNECTOR	52147-1510
	CN202	22P FFC CONNECTOR	9604S-22C
	CN352	KR CONNECTOR	B5B-PH-K-S
	CN351	5P TOP POST	B5P-SHF-1AA
	CN102,CN354	6P TOP POST	B6P-SHF-1AA
	JA301	OPTICAL RECEIVE MODULE	GP1F32R
	JA303	OPTICAL SEND MODULE	GP1F32T
	JA302	1P JACK (ORANGE)	PKB1027
	JA304	1P JACK (ORANGE)	PKB1028
	JA305	REMOTE CONTROL JACK	PKN1004
		PCB BINDER	VEF1040
	CN101	32P FFC CONNECTOR	VKN1463
	KN302,KN303		VNF1084
		EARTH METAL FITTING	

E AUDIO ASSY

(1) CONTRAST TABLE

PWZ3723 and PWZ3729 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		PWZ3723	PWZ3729	
	C431,C432	CQMBA472J50	CQMBA152J50	
	C471,C472	PCH1124	CEGA470M25	
	L831,L832	Not used	LFA1R0K	

Mark	No.	Description	Part No.

(2) PARTS LIST FOR PWZ3723

SEMICONDUCTORS

	IC801		AK5340-VS
	IC406		M5218AFP
	IC803,IC804		NJM4565D-D
	IC404		NJM4580D
	IC401		PE8001A
	Q405-Q408		2SC3068
	Q402		DTA114EK
	Q409		DTA114TK
	Q403		DTA124EK
	Q401,Q404		DTC124EK
	D401-D404		1SS254
	D407,D408		1SS355
	D406,D801,D803		DAN202K
	D405,D802,D804		DAP202K

COILS

	L328,L329,L402,L404	CHIP SOLID INDUCTOR	QTL1015
	L407,L408	CHIP SOLID INDUCTOR	QTL1015
	L401	FERRITE BEAD	VTH1020

CAPACITORS

	C414,C415,C429,C430,C801		CCSQCH101J50
	C821		CCSQCH101J50
	C402,C823,C824		CCSQCH120J50
	C803,C804		CCSQCH121J50
	C401		CCSQCH220J50
	C817,C818,C833,C835		CEAT100M50
	C813,C814,C844,C848		CEAT220M50
	C851,C852		CEAT220M50
	C832		CEAT4R7M50
	C421,C422,C425,C426		CEGA470M50
	C441		CEZA4R7M50
	C413		CKSQYB102K50
	C403		CKSQYB473K50
	C819,C820		CKSQYB821K50
	C454,C807-C810,C846		CKSQYF103Z50
	C815,C816,C831,C834,C836		CKSQYF104Z25
	C847,C883,C884		CKSQYF104Z25
	C404,C408,C409		CKSQYF104Z50
	C427,C428		CQMBA102J50
	C423,C424,C433,C434		CQMBA152J50
	C431,C432		CQMBA472J50
	C410 (1000μF/16V)		PCH1122
	C471,C472,C805,C806 (47μF/50V)		PCH1124
	C811,C812 (47μF/50V)		PCH1124
	C406,C407 (4.7μF/50V)		PCH1127
	C405,C411,C412 (220μF/25V)		PCH1128

RESISTORS

	R475,R476		RD1/4PU102J
	R441-R444,R811,R812		RD1/4PU103J
	R817,R818		RD1/4PU103J
	R427,R428		RD1/4PU223J
	R435,R436		RD1/4PU271J
	R440,R807,R808		RD1/4PU272J
	R819,R820,R823,R824		RD1/4PU301J
	R429-R434,R448,R466		RD1/4PU471J
	R821,R822,R825,R826		RD1/4PU473J
	R411,R412		RDR1/2PM101J

Mark	No.	Description	Part No.
	R413,R414		RN1/10SE1002D
	R415,R416		RN1/10SE1202D
	R801-R804		RS1/2LMF101J
	Other Resistors		RS1/10S□□□J

OTHERS

	CN401	3P JUMPER CONNECTOR	52147-0310
	CN402	8P JUMPER CONNECTOR	52147-0810
	J801	JUMPER WIRE 15P	D20PYY1510E
	JA401,JA801	2P JACK (AU)	PKB1029
	X401	CRYSTAL RESONATOR	PSS1008
		PCB BINDER	VEF1040
	KN111,KN112,KN114	EARTH METAL FITTING	VNF1084

F HEADPHONE ASSY

Although PWZ3688 and PWZ3713 are different in part number, they consist of the same components.

PARTS LIST FOR PWZ3713

COILS

⚠	L461-L463	CHIP SOLID INDUCTOR	QTL1015

CAPACITORS

	C461,C463,C466	CCSQCH101J50
	C468	CKCYF473Z50
	C462,C464,C465	CKSQYF103Z50

RESISTOR

	VR401	RCV1123

OTHERS

	CN403	3P JUMPER CONNECTOR	52147-0310
	JA403	HEADPHONE JACK	RKN1002
	KN401	EARTH METAL FITTING	VNF1084

G VR ASSY

RESISTORS

	VR801	PCS1016
	Other Resistors	RS1/10S□□□J

H POWER ASSY

(1) CONTRAST TABLE

PWZ3724 and PWZ3741 are constructed the same except

Mark	Symbol and Description	Part No.		Remarks
		PWZ3724	PWZ3741	
	C23,C25	CEAT471M16	PCH1129	
	C34,C35	PCH1127	CEGA4R7M50	
	C42	CEAT102M16	PCH1122	
	C52	CEAT101M35	PCH1126	
	C54	CEAT470M35	PCH1128	
⚠	CN1 1P AC INLET	AKP1122	AKP7005	

Mark	No.	Description	Part No.

for the following :

(2) PARTS LIST FOR PWZ3724

SEMICONDUCTORS

⚠	IC21,IC24		BA05T
⚠	IC35,IC36		ICP-N10
⚠	IC22,IC23,IC25		ICP-N15
⚠	IC33		NJM7805FA
⚠	IC31		NJM7812FA
⚠	IC32		NJM79M12FA
⚠	D31-D34		10DF2FA9
⚠	D52		11ES2
⚠	D54		MTZJ18B
⚠	D11		S2VB20F

COILS

	L11,L23	FERRITE BEAD	VTH1020

SWITCH

⚠	S1	RSA1001

CAPACITORS

⚠	C1 (10000pF/AC250V)	ACG7020
	C52	CEAT101M35
	C42	CEAT102M16
	C54	CEAT470M35
	C23,C25	CEAT471M16
	C11,C13,C32,C33	CFTLA103J50
	C55,C56	CFTLA103J50
	C38,C39	CFTLA393J50
	C31	CKSQYF102Z50
	C16,C17	CKSQYF103Z50
	C12	CKSQYF104Z50
	C15,C24	CKSQYF473Z50
	C34,C35 (4.7µF/50V)	PCH1127
	C37,C41 (1000µF/35V)	PCH1136
	C36,C40 (3300µF/35V)	PCH1137
	C21 (10000µF/16V)	VCH1054

RESISTORS

	R51	RD1/4PU103J
	R52-R54	RD1/4PU152J
	R31	RD1/4PU8R2J
⚠	R38	RFA1/4PL8R2J
	Other Resistors	RS1/10S□□□J

OTHERS

		6P CABLE HOLDER	51048-0600
		8P CABLE HOLDER	51048-0800
	CN51	4P JUMPER CONNECTOR	52147-0410
⚠	CN1	1P AC INLET	AKP1122
⚠	H1,H2	FUSE CLIP	AKR1003
⚠	CN2	2P-VH CONNECTOR	B2P3-VH
	J21	JUMPER WIRE 6P	D20PYY0630G
	J31	JUMPER WIRE 8P	D20PYY0820G
	CN11	9P JUMPER CONNECTOR	KPD9
	J2	EARTH LEAD UNIT	PDF1168
	KN12,KN13	EARTH METAL FITTING	VNF1084

Mark	No.	Description	Part No.

I TRANS ASSY

Although PWZ3725 and PWZ3750 are different in part number, they consist of the same components.

PARTS LIST FOR PWZ3750

SEMICONDUCTORS

⚠	IC1		AEK7017

CAPACITORS

	C901-C909		CKSQYF104Z50

OTHERS

		9P CABLE HOLDER	51052-0900
⚠	J11	PARALLEL CORD	DTUY0915E
⚠	J1	CONNECTOR ASSY 2P	PDE1299
	J3	EARTH LEAD UNIT (70L)	PDF1176

J FUNCTION ASSY

(1) CONTRAST TABLE

PWZ3687 and PWZ3697 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		PWZ3687	PWZ3697	
	R707	RS1/10S473J	Not used	
	R721	Not used	RS1/10S473J	

(2) PARTS LIST FOR PWZ3687

SEMICONDUCTORS

	IC705	BR93LC46AF
	IC704	BU2092F
	IC701	PD4968A
	IC702	S-806E
	Q705	2SC2412K
	Q701-Q704	DTA114EK
	Q706	DTC124TK
	D709	1SS355
	D707,D708	GL3ED8
	D705,D706	SLP9118C51H

COIL

	L701	CHIP SOLID INDUCTOR	QTL1015

SWITCHES

	S720	PSB1007
	S702-S719	VSG1009

CAPACITORS

	C715	CCCCH470J50
	C701	CCSQCH101J50
	C705,C739	CEAT101M10
	C711	CEAT470M10
	C702	CKSQYF103Z50
	C706,C708-C710	CKSQYF104Z25

Mark	No.	Description	Part No.

RESISTORS

	R710-R715	ACN7081
	R731	DCN1094
	Other Resistors	RS1/10S□□□J

OTHERS

		5P CABLE HOLDER	51048-0500
	CN701	22P FFC CONNECTOR	9604S-22C
	J701	JUMPER WIRE 4P	D20PWY0425G
	J703	JUMPER WIRE 5P	D20PWY0515E
		REMOTE RECEIVER UNIT	GP1U27X
	V701	FL INDICATOR TUBE	PEL1097
	X701	CERAMIC RESONATOR (4.19MHz)	VSS1014

6. ADJUSTMENT

6.1 DISCS TO BE USED

1. When adjusting the servo system adjustment
   CD : Test disc for adjustment (STD-903 or equivalent)
   Test disc for inspection (STD-914 or equivalent)

6.2 MEASURING INSTRUMENTS

(1) Laser Power Meter
Following power meter manufactured by Advantest Corporation or equivalent :
TQ8210 + TQ82017
TQ8215 + TQ82021
TQ8215 + TQ82010 + TQ82017
(2) Audio Analyzer
(3) Oscilloscope
(4) Distortion Factor Meter
(5) CD Jitter Meter
(6) Block Error Rate Counter

6.3 TEST MODE

6.3.1 Test Mode

For adjustment, set the unit to Test mode. To enter Test mode, turn on the unit with the Test Mode Short-Circuit pattern on the FUNCTION Assy. In Test mode, all the displays (FL, LEDs) on the unit should be lit. If not, turn the power off and repeat the same steps again.

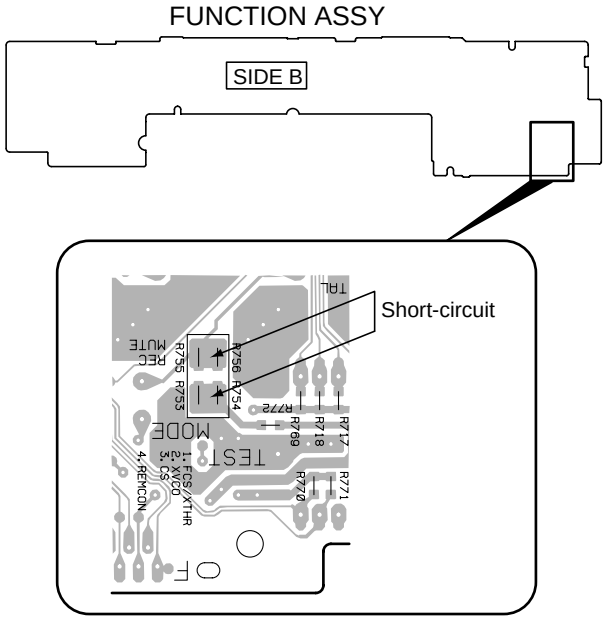


Fig. 1 Enter the Test mode

6.3.2 Operations in Test Mode

In Test mode, the following adjustment functions are assigned to the buttons, as explained below.

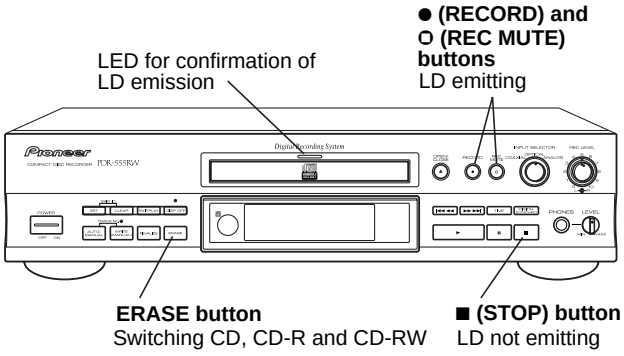


Fig.2 During adjustment of LD power (Input selector: analog)

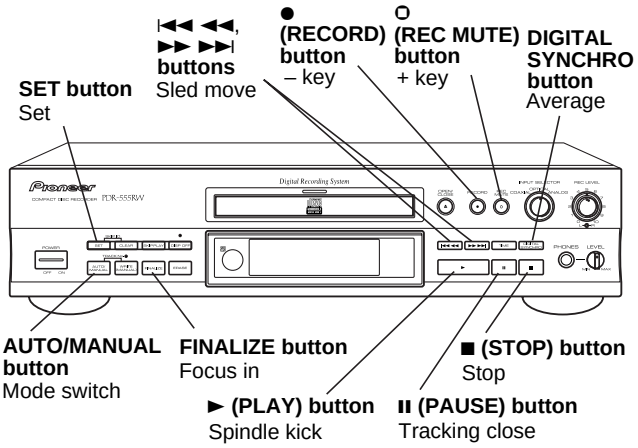


Fig.3 During adjustment of servo system (Input selector: optical)

6.3.3 How to Playback a Disc in Test Mode

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.
Here is the key operation sequence for playing back a disc in test mode.

FINALIZE	Lights up the laser diode and closes the focus servo.
⇩	
PLAY ►	Starts the spindle motor and closes the spindle servo.
⇩	
PAUSE II	Close the tracking servo.
⇩	

Wait at least 2 – 3 seconds between each of these operations.

6.4 ADJUSTMENT 1 (LASER DIODE POWER ADJUSTMENT)

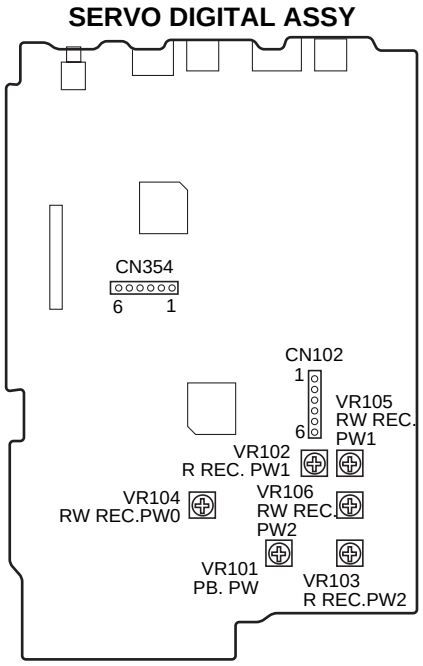


Fig. 4 Adjustment points

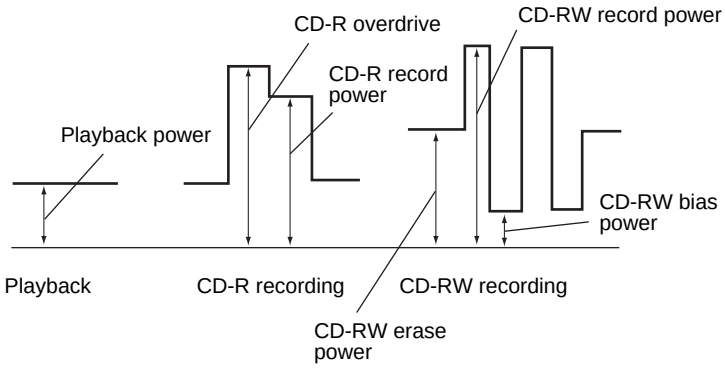
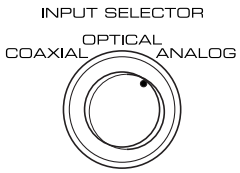


Fig.5 Output power of the laser diode

Note 1 : Attach the remote sensor of the laser power meter to a point angled away about 10 degrees against the pickup lens and where the maximum power is detected, so that there will be no light reflected onto the pickup.
Note 2 : When adjusting with VR101 to VR106, first turn them completely counter-clockwise and then adjust clockwise, so that the value to be reached is not exceeded.
Note 3 : Set the wavelength of laser power meter to 780 nm.

The following adjustments 1 through 3 must be done with the Input Selector set to the Analog position (LD power adjustment mode).



6.4.1 Playback Power Adjustment

Test Point	Pickup objective lens
Adjustment Point	VR101 (PB. PW)
Adjustment Value	0.60 mW ± 0.05 mW

[Procedure]

(1) Check that "CD" is displayed on the FL display. If "CD-R" or "CD-RW" is displayed, press the STOP button repeatedly until "CD" is displayed.
(2) Press the RECORD button. The LED for confirmation of LD emission will light in orange.
(3) Press the REC MUTE button. The LED for confirmation of LD emission will light in red. The LD is emitting in this status.
(4) Turn VR101 clockwise until the adjustment value to be reached is obtained.
(5) Press the STOP button to shut off the LD.

6.4.2 CD-R Record Power Adjustment

Test Point	Pickup objective lens
Adjustment Point	VR102 (R REC. PW1), VR103 (R REC. PW2)
Adjustment Value	VR102 : 4.60 mW ± 0.1 mW VR103 : Addition of 0.1 mW ± 0.01 mW to the adjustment value of VR102

[Procedure]

(1) Turn VR102 and VR103 completely counterclockwise to set their power output to minimum.
(2) Press the ERASE button once so that "CD-R" appears on the FL display.
If the indication is "CD" or "CD-RW," press the ERASE button repeatedly until "CD-R" is displayed on the FL display.
(3) Press the RECORD button. The LED for confirmation of LD emission will light in orange.
(4) Press the REC MUTE button. The LED for confirmation of LD emission will light in red. The LD is emitting in this status.

Adjustment of CD-R record power

(5) Turn VR102 clockwise until the adjusted value is 4.60 mW ± 0.1 mW.

Adjustment of CD-R overdrive power

(6) Turn VR103 clockwise until the adjusted value becomes adjustment value at Step 5 above + (0.1 mW ± 0.01 mW).
(7) Press the STOP button to shut off the LD.

6.4.3 CD-RW Record Power Adjustment

Test Point	Pickup objective lens
Adjustment Point	VR104 (RW REC. PW0), VR106 (RW REC. PW2), VR105 (RW REC. PW1)
Adjustment Value	VR104 : 0.40 mW ± 0.05 mW VR106 : 2.40 mW ± 0.1 mW VR105 : 5.90 mW ± 0.1 mW

[Procedure]

(1) Turn VR104, VR105 and VR106 completely counterclockwise to set their power output to minimum.
(2) Press the ERASE button twice so that "CD-RW" appears on the FL display.
If the indication is "CD" or "CD-R," press the ERASE button repeatedly until "CD-RW" appears on the FL display.
(3) Press the RECORD button. The LED for confirmation of LD emission will light in orange.
(4) Press the REC MUTE button. The LED for confirmation of LD emission will light in red. The LD is emitting in this status.
(5) Turn VR104 clockwise until the adjusted value is 0.40 mW ± 0.05 mW.

Adjustment of CD-RW record power

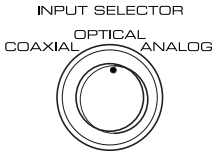
(6) Turn VR106 clockwise until the adjusted value is 2.40 mW ± 0.1 mW.

Adjustment of CD-RW erase power

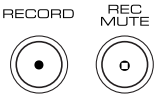
(7) Turn VR105 clockwise until the adjusted value is 5.90 mW ± 0.1 mW.
(8) Press the STOP button to shut off the LD.

6.5 ADJUSTMENT 2 (SERVO SYSTEM ADJUSTMENT)

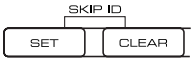
For servo adjustment, set the INPUT SELECTOR to OPTICAL.



Use the RECORD and REC MUTE buttons to make the adjustments.



To register an adjustment, press the (SKIP ID) SET button.



To reset the adjusted values to the initial settings, press and hold the (SKIP ID) CLEAR button for 4 seconds.

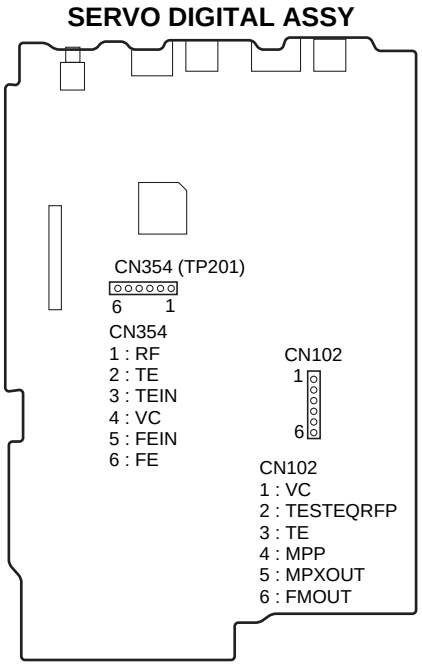


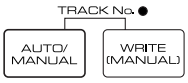
Fig. 6 Adjustment points

6.5.1 Focus Offset Adjustment

Test Point	CN354 - pin 6 (FE)
Adjustment Point	RECORD button and REC MUTE button
Adjustment Value	0 mV ± 10 mV

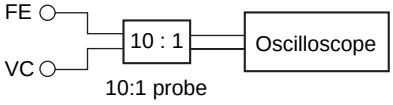
[Procedure]

(1) Press the AUTO/MANUAL button until "01 F4" appears on the FL display.



(2) Adjust with the RECORD and REC MUTE buttons until the value for Pin 6 of CN354 is 0 mV ± 10 mV.

(3) Press the SET button to register the adjustment.
Once the adjustment is registered with the SET button, "?" on the FL display will disappear.



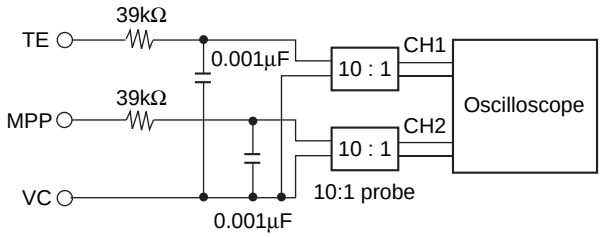
6.5.2 M-S Mix Ratio Adjustment

Test Point	CN102 - pin 3 (TE) and pin 4 (MPP)
Adjustment Point	RECORD button and REC MUTE button
Adjustment Value	Adjust until the value of the output signals from pin 3 (TE) and pin 4 (MPP) of CN102 are the same, or the differential output of these signals is minimal.

[Procedure]

(1) Press the AUTO/MANUAL button so that "02 F3" appears on the FL display.
(2) Press the FINALIZE button for focus-in.
(3) Press the PLAY button for CAV-servo spindle kick (the status where the spindle rotates with the focus servo on and tracking servo off).
(4) Adjust with the RECORD and REC MUTE buttons until the value to be reached is obtained.
(5) Press the SET button to register the adjustment.
Once the adjustment is registered with the SET button, "?" on the FL display will disappear.
(6) Press the STOP button to stop the unit.

Note: For adjustment, use the following circuits.



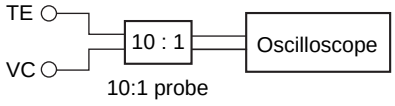
Note: Adjustment must be done around mid-radius on a disc.

6.5.3 Tracking Offset Adjustment

Test Point	CN354 - pin 2 (TE) or CN102-pin 3 (TE)
Adjustment Point	RECORD button and REC MUTE button
Adjustment Value	0 mV ± 10 mV

[Procedure]

(1) Press the AUTO/MANUAL button so that "03 F6" appears on the FL display.
(2) Adjust with the RECORD and REC MUTE buttons until the above adjustment value to be reached is obtained.
(3) Press the SET button to register the adjustment.
Once the adjustment is registered with the SET button, "?" on the FL display will disappear.



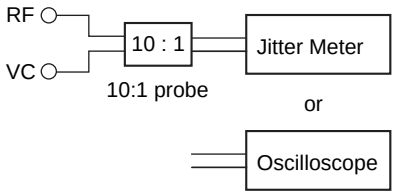
Note: Perform the adjustment in Stop mode.
This adjustment is possible with the low-pass filter used in adjustment 5 above attached.

6.5.4 Focus Bias Adjustment

Test Point	CN354 - pin 1 (RF)
Adjustment Point	DIGITAL SYNCHRO button, RECORD button and REC MUTE button
Adjustment Value	Adjust until RF jitter is minimal or that the eye pattern of the RF waveform is most open.

[Procedure]

(1) Press the DIGITAL SYNCHRO button in Stop mode.
Note: Make sure the unit is in Stop mode.
(2) Check that "48" appears on the FL display.
(3) Press the AUTO/MANUAL button so that "04 34" appears on the FL display.
(4) Press the FINALIZE button for focus-in.
(5) Press the PLAY button for CAV-servo spindle kick.
(6) Press the PAUSE button to close the tracking servo, then set the unit to Playback mode.
(7) Adjust with the RECORD and REC MUTE buttons until the above adjustment value to be reached is obtained.
Press the SET button to register the adjustment. Once the adjustment is registered with the SET button, "?" on the FL display will disappear.
(8) Press the STOP button to stop the unit.



Note: Adjustment must be done around mid-radius on a disc.

7. GENERAL INFORMATION

7.1 PARTS

7.1.1 IC

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

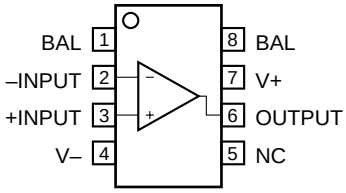
● List of IC

NJM2136M, MC34072D, AK8563, BA7082F, AD1893JST, BA5912AFP-Y, BA5932FP, CXD2585Q, TK11041M-1, S-806E, PE8001A

■ NJM2136M (SERVO DIGITAL ASSY : IC101)

• Operational Amplifier

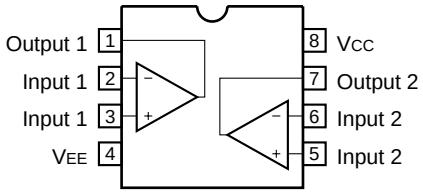
●Block Diagram



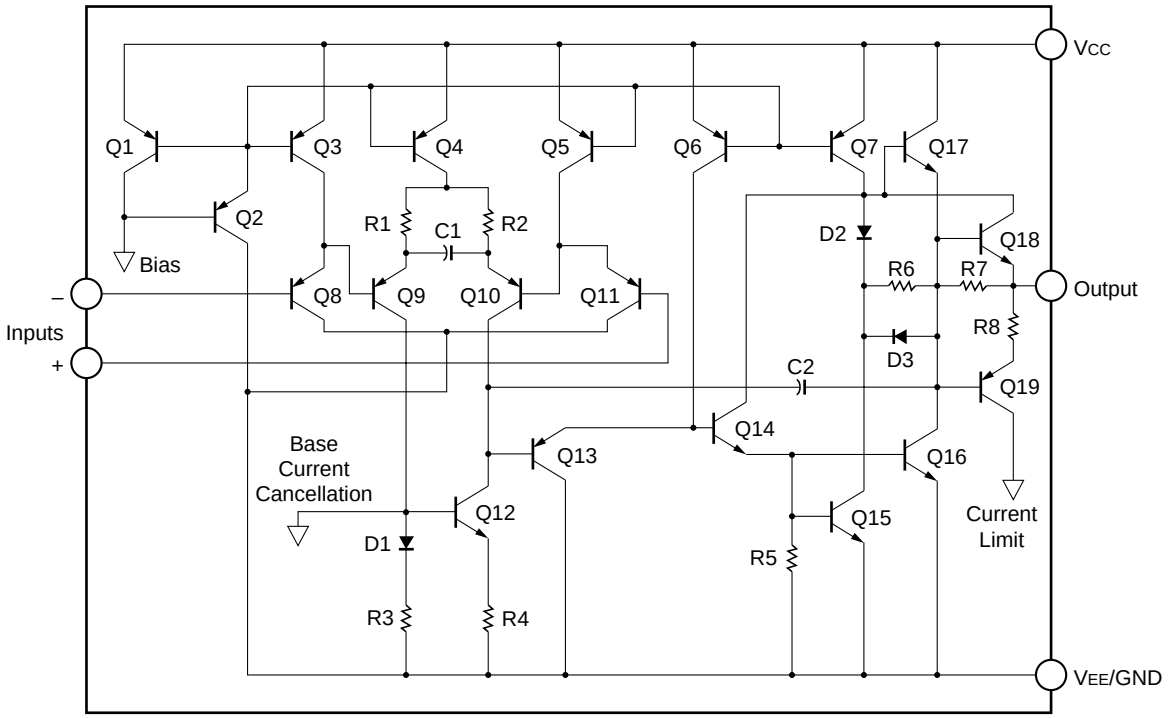
■ MC34072D (SERVO DIGITAL ASSY : IC102)

• Operational Amplifier

● Pin Assignment



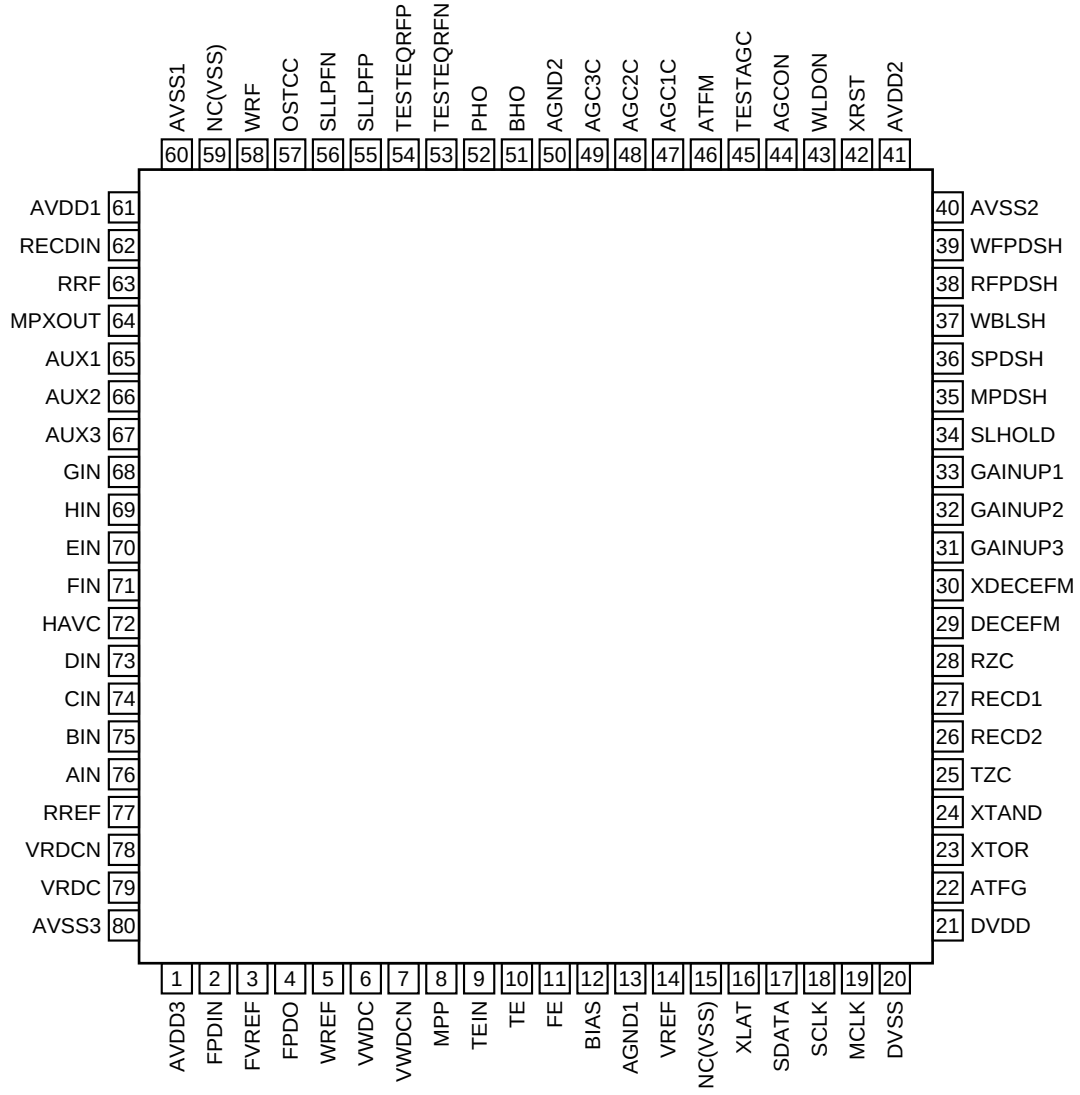
● Block Diagram



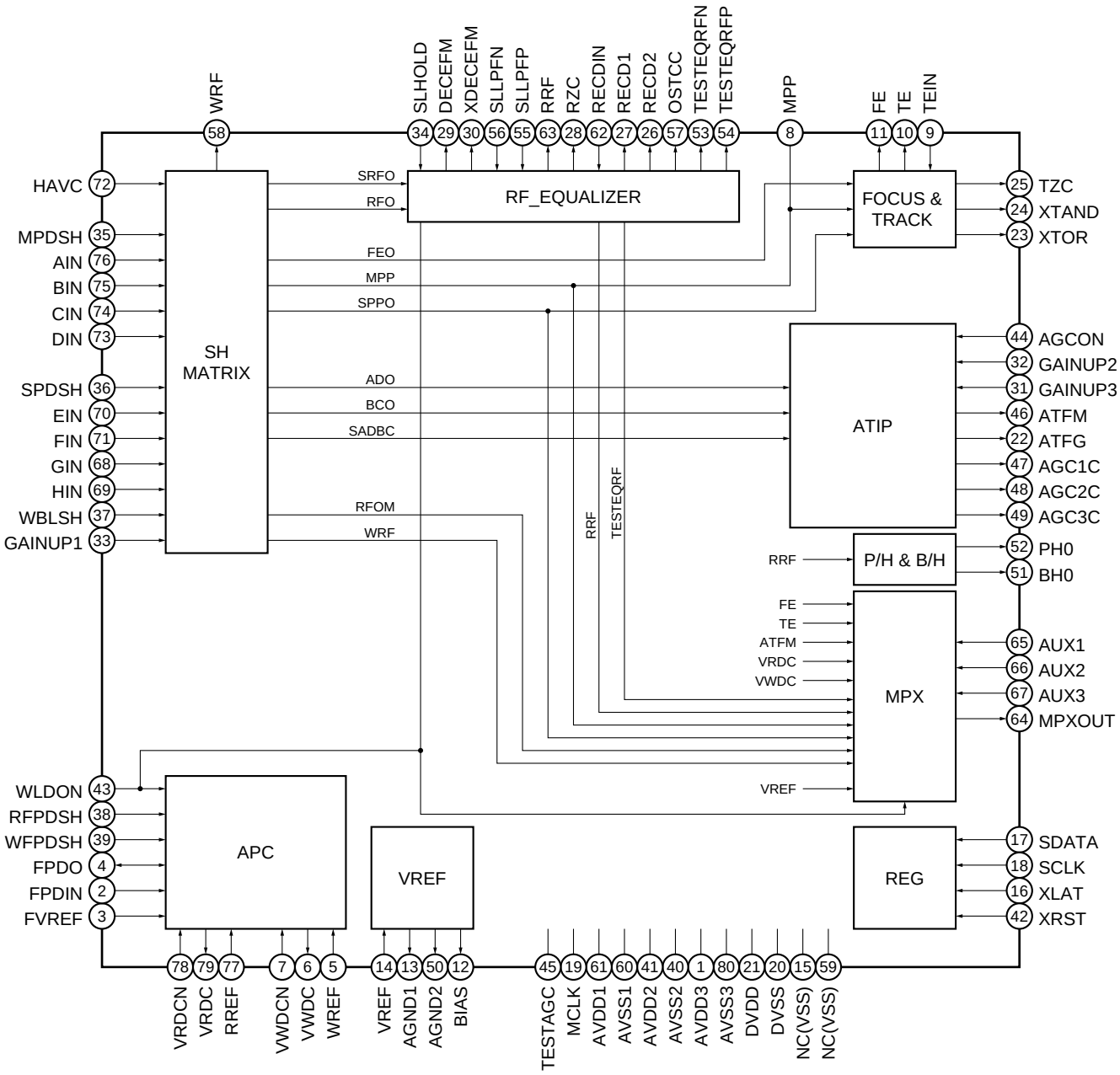
AK8563 (SERVO DIGITAL ASSY : IC103)

- **RF Processor IC**

- **Pin Assignment (Top view)**



- **Block Diagram**



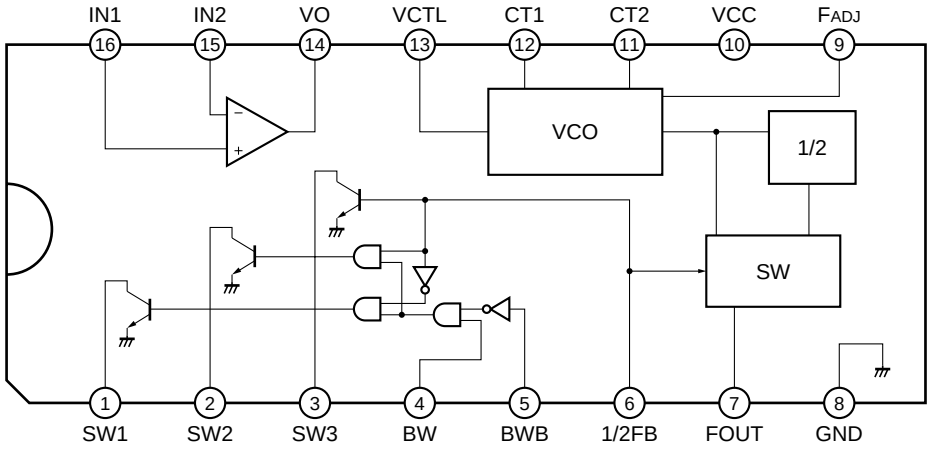
● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	AVDD3	I	Analog positive power supply pin	41	AVDD2	I	Analog positive power supply pin
2	FPDIN	I	Laser monitor diode connection pin	42	XRST	I	Register reset "L": Initialize the register
3	FVREF	I	Reference voltage input for APC	43	WLDON	I	Write LD control input "L": Set Write APC set-value to zero, "H": LD ON
4	FPD0	I/O	Laser monitor output (connect a resistor for I/V conversion between this pin and FPDIN (pin 2)) / Laser monitor voltage input	44	AGCON	I	Wobble AGC enable input "H": AGC ON , "L": AGC reset
5	WREF	I	Power setting voltage input for Write APC	45	TESTAGC	O	Test pin
6	VWDC	O	Laser driver control output for Write	46	ATFM	O	Wobble signal output
7	VWDCN	I	Laser driver control amp.(–) for Write	47	AGC1C	O	External capacitor connection pin for AGC response speed setting
8	MPP	O	Main push-pull signal output	48	AGC2C	O	
9	TEIN	I	Input for tracking signal process	49	AGC3C	O	
10	TE	O	Tracking error signal output	50	AGND2	O	Decoupling pin for internal reference voltage
11	FE	O	Focus error signal output	51	BH0	O	Bottom-level output of RRF signal
12	BIAS	O	Connect a bias resistor. RBIAS=4.7kΩ	52	PH0	O	Peak-level output of RRF signal
13	AGND1	O	Decoupling pin for internal reference voltage	53	TESTEQRFN	O	Test pin
14	VREF	I/O	Decoupling pin for internal reference voltage / Reference voltage input	54	TESTEQRFP	O	Test pin
15	NC (VSS)	–	Connect to VSS	55	SLLPFP	I	LPF input (+) for auto slice
16	XLAT	I	Latch input for register setting	56	SLLPFN	I	LPF input (–) for auto slice
17	SDATA	I	Data input for register setting	57	OSTCC	O	Capacitor connection pin for fc setting of equalizer output offset-canceller
18	SCLK	I	Clock input for register setting	58	WRF	O	Write RF signal output
19	MCLK	I	Main clock input (34.5744MHz)	59	NC (VSS)	–	Connect to VSS
20	DVSS	I	Digital ground pin	60	AVSS1	O	Analog ground pin
21	DVDD	I	Digital positive power supply pin	61	AVDD1	I	Analog positive power supply pin
22	ATFG	O	ATIP FG output (Wobble signal after the binary data conversion)	62	RECDIN	I	RF input for recording block detection
23	XTOR	O	Tracking amplitude detection output	63	RRF	O	Read RF signal output
24	XTAND	O	Tracking error detection output	64	MPXOUT	O	Multiplexer output for signal monitor
25	TZC	O	Tracking zero-cross detection signal output	65	AUX1	I	Auxiliary input (1) for signal monitor
26	RECD2	O	Recording block detection signal 2 "H": Recording block , "L": Unrecording block	66	AUX2	I	Auxiliary input (2) for signal monitor
27	RECD1	O	Recording block detection signal 1 "H": Recording block , "L": Unrecording block	67	AUX3	I	Auxiliary input (3) for signal monitor
28	RZC	O	RF zero-cross detection signal output	68	GIN	I	Side beam signal (G) input
29	DECEFM	O	EFM output after sliced (inversion)	69	HIN	I	Side beam signal (H) input
30	XDECEFM	O	EFM output after sliced (positive-phase)	70	EIN	I	Side beam signal (E) input
31	GAINUP3	I	0 and +18dB switching control input "H": +18dB, "L": 0dB	71	FIN	I	Side beam signal (F) input
32	GAINUP2	I		72	HAVC	I	Center voltage input of main and side beam signals
33	GAINUP1	I		73	DIN	I	Main beam signal (D) input
34	SLHOLD	I	Slice level hold signal input "H": Hold	74	CIN	I	Main beam signal (C) input
35	MPDSH	I	Sample pulse input for main-beam "H": Sample , "L": Hold	75	BIN	I	Main beam signal (B) input
36	SPDSH	I	Sample pulse input for side-beam "H": Sample , "L": Hold	76	AIN	I	Main beam signal (A) input
37	WBLSH	I	Sample pulse input for Wobble signal "H": Sample , "L": Hold	77	RREF	I	Power setting voltage input for Read APC
38	RFPDSH	I	Sample pulse input for Read APC "H": Sample , "L": Hold	78	VRDCN	I	Laser driver control amp. (–) for Read
39	WFPDSH	I	Sample pulse input for Write APC "H": Sample , "L": Hold	79	VRDC	O	Laser driver control output for Read
40	AVSS2	I	Analog ground pin	80	AVSS3	I	Analog ground pin

■ BA7082F (SERVO DIGITAL ASSY : IC302)

• VCO IC

● Block Diagram



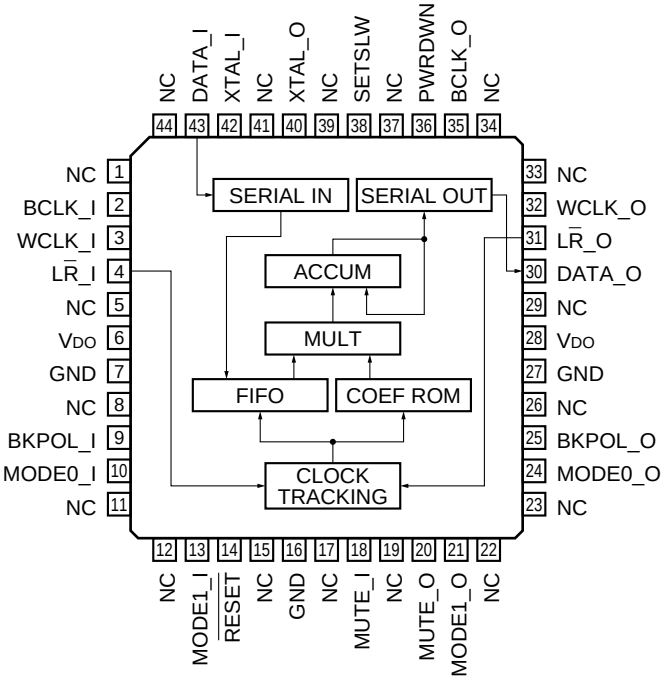
● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	SW1	O	Collector open output Logic block output for control sensibility adjustment	9	FADJ	–	f0 Adjust pin
2	SW2			10	VCC	–	VCC pin
3	SW3			11	CT2	–	Capacitor connection pin for VCO oscillation
4	BW	I	Logic block input for control sensibility adjustment	12	CT1		
5	BWB			13	VCTL	I	VCO control pin Normally, use for short-circuit with VO (pin 14).
6	1/2FB	I	Logic block input for control sensibility adjustment and 1/2 frequency demultiplier switch H: through , L: 1/2 frequency demultiplier output	14	V0	O	Amp. output for sensibility adjustment
7	FOUT	O	VCO output pin	15	IN2	I	Amp. input for sensibility adjustment IN1: positive-phase input IN2: Inverting input
8	GND	–	GND pin	16	IN1		

■ AD1893JST (SERVO DIGITAL ASSY : IC311)

• Sample Rate Converter IC

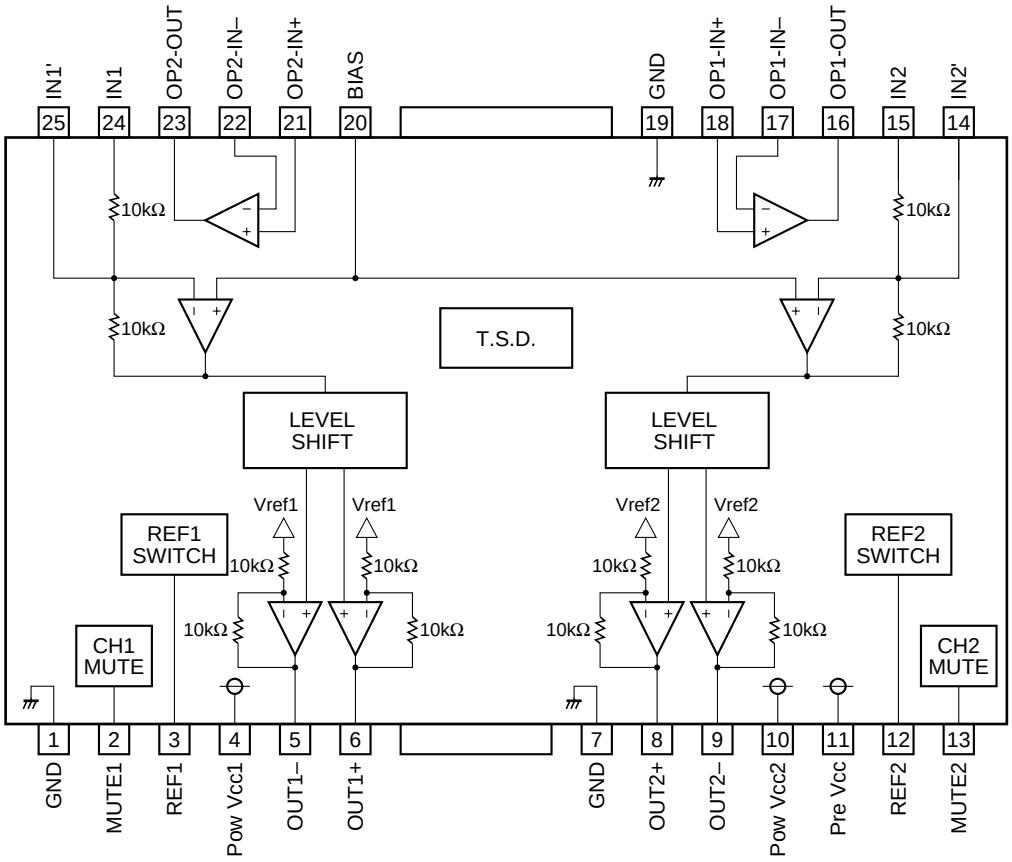
● Block Diagram



■ BA5912AFP-Y (SERVO DIGITAL ASSY : IC351)

• **Driver IC**

● **Block Diagram**



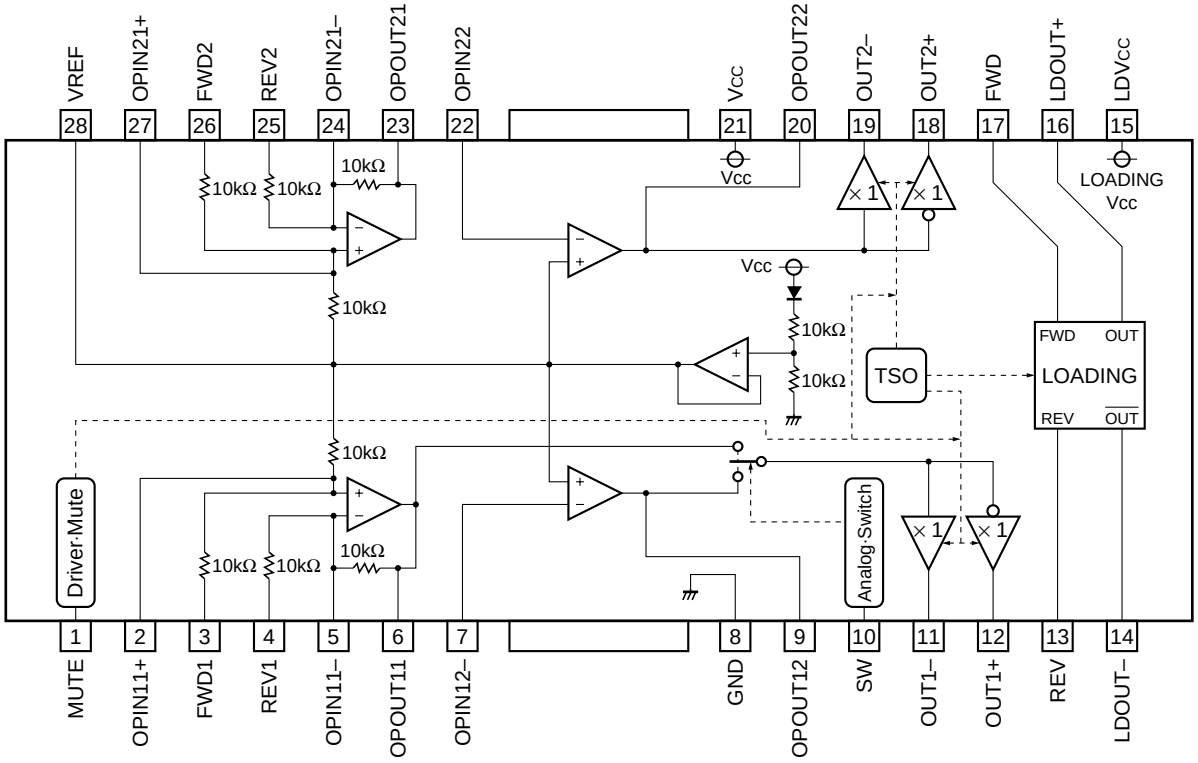
● **Pin Function**

No.	Pin Name	Function	No.	Pin Name	Function
1	GND	Sub-straight GND	14	IN2'	CH2 input pin for gain adjustment
2	MUTE1	CH1 mute pin	15	IN2	CH2 gain fixed input
3	REF1	CH1 Vref switching pin	16	OP1-OUT	OP amp. 1 output
4	Pow Vcc1	Pow Vcc (CH1)	17	OP1-IN–	OP amp. 1 – input
5	OUT1–	CH1 negative output	18	OP1-IN+	OP amp. 1 + input
6	OUT1+	CH1 positive output	19	GND	Sub-straight GND
7	GND	Sub-straight GND	20	BIAS	Bias input
8	OUT2+	CH2 positive output	21	OP2-IN+	OP amp. 2 + input
9	OUT2–	CH2 negative output	22	OP2-IN–	OP amp. 2 – input
10	Pow Vcc2	Pow Vcc (CH2)	23	OP2-OUT	OP amp. 2 output
11	Pre Vcc	Pre Vcc	24	IN1	CH1 gain fixed input
12	REF2	CH2 Vref switching pin	25	IN1'	CH1 input pin for gain adjustment
13	MUTE2	CH2 mute pin			

■ BA5932FP (SERVO DIGITAL ASSY : IC352)

• **Driver IC**

● **Block Diagram**



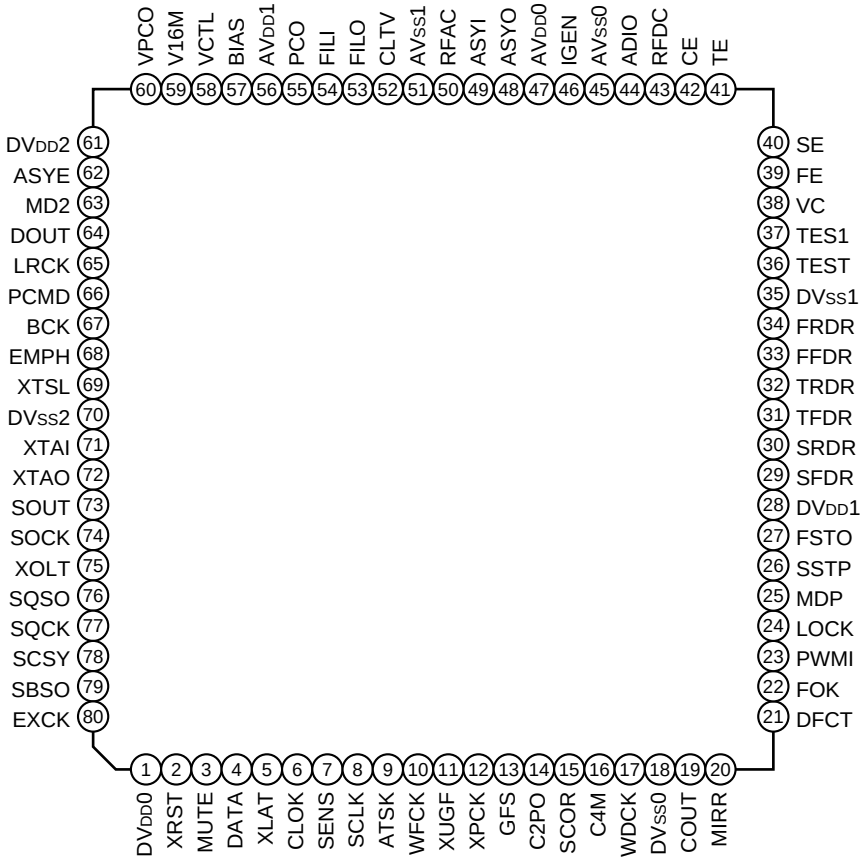
● **Pin Function**

No.	Pin Name	Function	No.	Pin Name	Function
1	MUTE	Mute pin	15	LDVcc	Vcc for loading and output H bridge section
2	OPIN11+	OP amp. non-inverting input	16	LDOUT+	Loading positive output
3	FWD1	Forward input	17	FWD	Loading forward input
4	REV1	Reverse input	18	OUT2+	Driver output
5	OPIN11–	OP amp. inverting input	19	OUT2–	Driver output
6	OPOUT11	OP amp. output	20	OPOUT22	OP amp. output
7	OPIN12–	OP amp. inverting input	21	Vcc	Vcc for two axes driver and loading pre section
8	GND	Sub-straight GND	22	OPIN22	OP amp. inverting input
9	OPOUT12	OP amp. output	23	OPOUT21	OP amp. output
10	SW	Analog switch input	24	OPIN21–	OP amp. inverting input
11	OUT1–	Driver output	25	REV2	Reverse input
12	OUT1+	Driver output	26	FWD2	Forward input
13	REV	Loading reverse input	27	OPIN21+	OP amp. non-inverting input
14	LDOUT–	Loading negative output	28	VREF	Reference voltage output

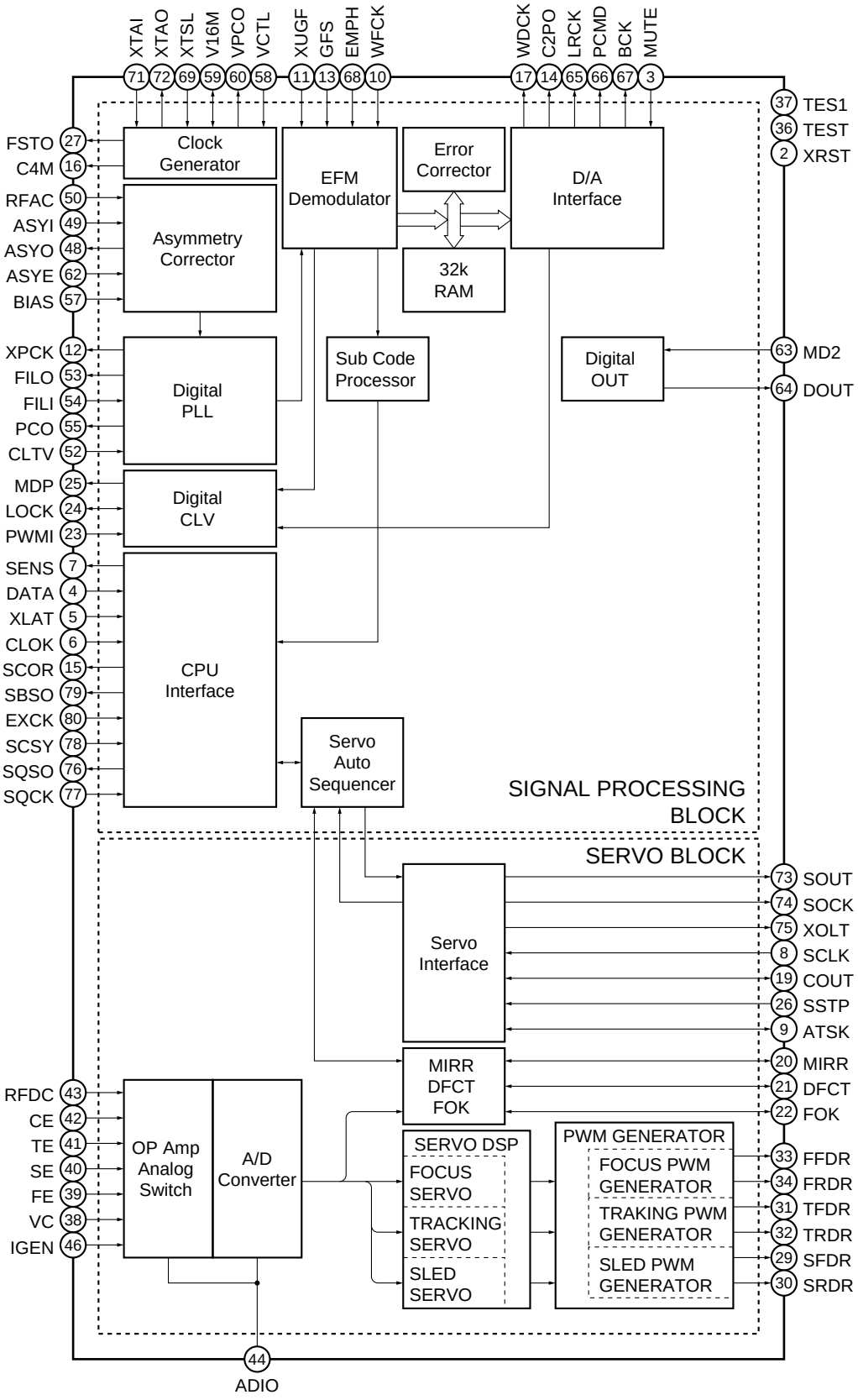
■ CXD2585Q (SERVO DIGITAL ASSY : IC353)

• **Digital Signal Processor IC**

● **Pin Assignment (Top view)**



● Block Diagram



● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	DVDD0	–	Digital power supply	41	TE	I	Tracking error input
2	XRST	I	System reset Reset when "L"	42	CE	I	Center servo analog input
3	MUTE	I	Mute input Mute when "H"	43	RFDC	I	RF signal input
4	DATA	I	Serial data input from CPU	44	ADIO	O	Test pin Non connection
5	XLAT	I	Latch input from CPU Serial data is latched at the falling edge.	45	AVSS0	–	Analog GND
6	CLOK	I	Serial data transfer clock input from CPU	46	IGEN	I	Constant current input for OP amplifier
7	SENS	O	SENS output to CPU	47	AVDD0	–	Analog power supply
8	SCLK	I	Clock input for SENS serial-data readout	48	ASYO	O	EFM full-swing output ("L"=VSS, "H"=VDD)
9	ATSK	I/O	Input and output for unti-shock	49	ASYI	I	Asymmetry comparate voltage input
10	WFCK	O	WFCK output	50	RFAC	I	EFM signal input
11	XUGF	O	XUGF output MNT0 and RFCK output by switching the command.	51	AVSS1	–	Analog GND
12	XPCK	O	XPCK output MNT1 output by switching the command.	52	CLTV	I	VCO 1 control voltage input for gradual increase
13	GFS	O	GFS output MNT2 and XROF output by switching the command.	53	FILO	O	Filter output for master PLL (Slave=digital PLL)
14	C2PO	O	C2PO output MNT3 and GTOP output by switching the command.	54	FILI	I	Filter input for master PLL
15	SCOR	O	Outputs "H" when either subcode sync. S0 or S1 is detected.	55	PCO	O	Charge pump output for master PLL
16	C4M	O	4.2336MHz output Outputs 1/4 frequency demultiply of V16M in the CAV-W mode and variable pitch.	56	AVDD1	–	Analog power supply
17	WDCK	O	Word clock output f=2Fs Outputs GRSCOR by command switch	57	BIAS	I	Constant current input of asymmetry circuit
18	DVSS0	–	Digital GND	58	VCTL	I	VCO2 control voltage input for wide-band EFM PLL
19	COUT	I/O	Input and output of track-number count signal	59	V16M	I/O	VCO2 oscillation output for wide-band EFM PLL Clock input for wide-band EFM-PLL by command switch
20	MIRR	I/O	Mirror signal input and output	60	VPCO	O	Charge pump output for wide-band EFM PLL
21	DFCT	I/O	Defect signal input and output	61	DVDD2	–	Digital power supply
22	FOK	I/O	Focus OK signal input and output	62	ASYE	I	Asymmetry circuit ON/OFF control (L:OFF, H:ON)
23	PWMI	I	External control input of spindle motor	63	MD2	I	Digital out ON/OFF control (L:OFF, H:ON)
24	LOCK	I/O	GFS is sampled at 460Hz;when GFS is "H", this pin outputs "H". If GFS is "L" eight consecutive samples, this pin outputs "L". Input when LKIN="1".	64	DOUT	O	Digital out output
25	MDP	O	Servo control output of spindle motor	65	LRCK	O	D/A interface LR clock output f=Fs
26	SSTP	I	Detection signal input of disc innermost	66	PCMD	O	D/A interface Serial data output (2's COMP, MSB first)
27	FSTO	O	Outputs 2/3 frequency demultiply of XTAL pin	67	BCK	O	D/A interface Bit clock output
28	DVDD1	–	Digital power supply	68	EMPH	O	Outputs "H" when the playback disc has emphasis, and "L" when there is no emphasis.
29	SFDR	O	Sled drive output	69	XTSL	I	X'tal selection input 16.9344MHz: L, 33.8688MHz: H
30	SRDR	O		70	DVSS2	–	Digital GND
31	TFDR	O	Tracking drive output	71	XTAI	I	Crystal oscillation circuit input Input the external master clock via this pin.
32	TRDR	O		72	XTAO	O	Crystal oscillation circuit output
33	FFDR	O	Focus drive output	73	SOUT	O	Serial data output in the servo block
34	FRDR	O		74	SOCK	O	Serial data readout clock output in the servo block
35	DVSS1	–	Digital GND	75	XOLT	O	Serial data latch output in the servo block
36	TEST	I	TEST pin : normally GND	76	SQSO	O	SubQ 80-bit, PCM peak and level data output CD TEXT data output
37	TES1	I		77	SQCK	I	Clock input for SQSO readout
38	VC	I	Center voltage input	78	SCSY	I	Input for resynchronous of GRSCOR
39	FE	I	Focus error signal input	79	SBSO	O	Serial output of Sub P to W
40	SE	I	Sled error signal input	80	EXCK	I	Clock input for SBSO readout

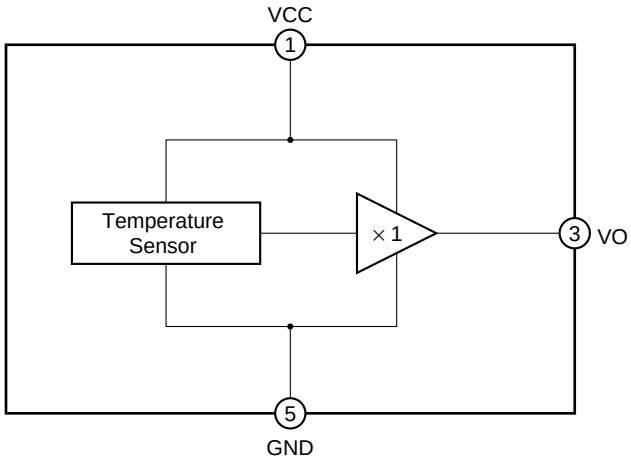
Notes)

- PCMD is an MSB first. two's complement output.
- GTOP is used to monitor the frame sync protection status. (High:sync protection window released)
- XUGF is the negative pulse for the frame sync derived from the EFM signal. It is the signal before sync protection.
- XPCK is the inverse of the EFM PLL clock. The PLL is designed so that the falling edge of XPCK and the EFM signal transition point coincide.
- GFS goes high when the frame sync and the insertion protection timing match.
- RFCK is derived with the crystal accuracy. This signal has a cycle of 136µs.
- C2PO represents the data error status.
- XROF is generated when the 32K RAM exceeds the ±28 Frame jitter margin.

■ TK11041M-1 (SERVO DIGITAL ASSY : IC355)

• **Thermo Sensor IC**

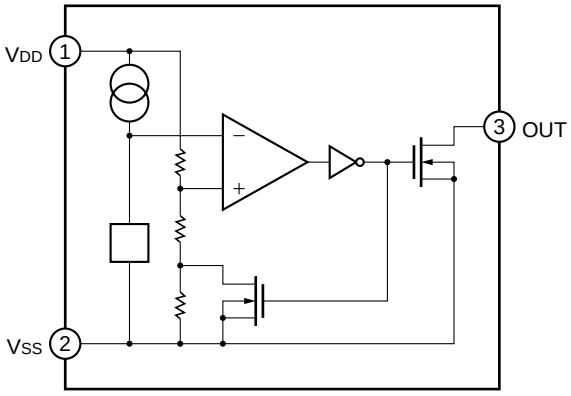
● **Block Diagram**



■ S-806E (FUNCTION ASSY : IC702)

• **Voltage Detector IC**

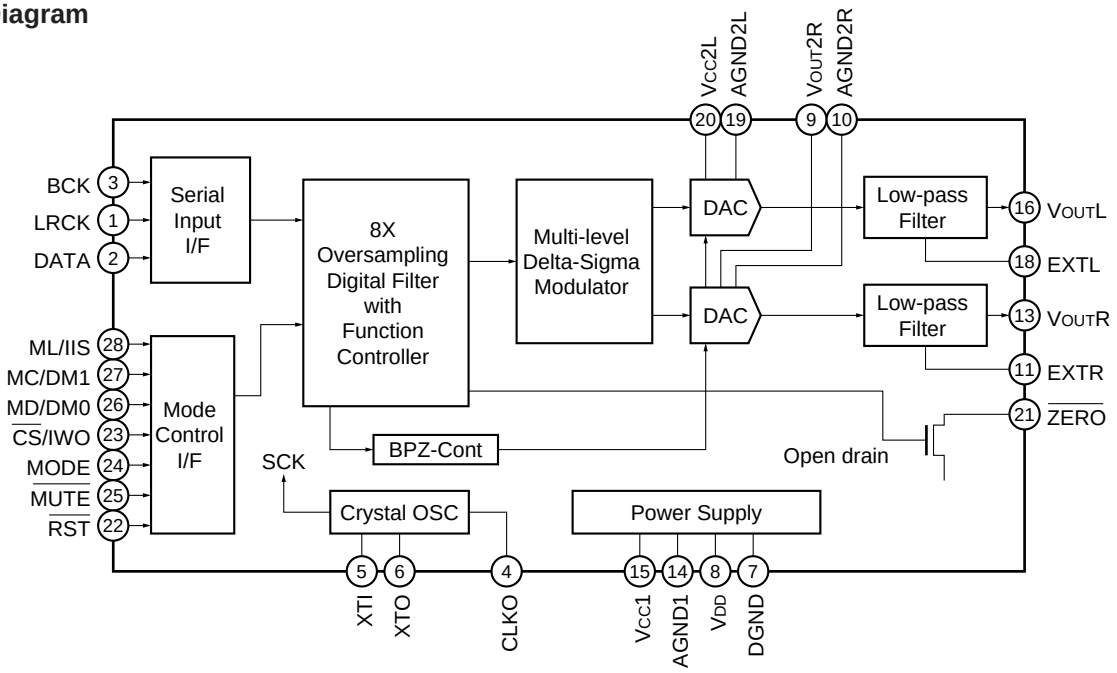
● **Block Diagram**



■ PE8001A (AUDIO ASSY : IC401)

• D/A Converter IC

● Block Diagram



● Pin Function

No.	Pin Name	I/O	Function	No.	Pin Name	I/O	Function
1	LRCK	I	LRCK clock input (fs) ∗1	15	VCC1	–	Analog power supply +5V
2	DATA	I	Data input ∗1	16	VOUTL	O	L ch analog voltage output
3	BCK	I	Bit clock input for data ∗1	17	NC	–	Non connection
4	CLKO	O	Buffer output of system clock	18	EXTL	O	L ch analog output amp. common
5	XTI	I	Crystal oscillation connection or external clock input	19	AGND2L	–	Analog GND
6	XTO	O	Crystal oscillation connection	20	VCC2L	–	Analog power supply +5V
7	DGND	–	Digital GND	21	$\overline{\text{ZERO}}$	O	Zero data flag
8	VDD	–	Digital power supply +5V	22	$\overline{\text{RST}}$	I	Reset ∗2
9	VCC2R	–	Analog power supply +5V	23	$\overline{\text{CS}}$/IWO	I	Chip select / Input format select ∗3
10	AGND2R	–	Analog GND	24	MODE	I	Mode control select ∗2 (H: Software, L: Hardware)
11	EXTR	O	R ch analog output amp. common	25	$\overline{\text{MUTE}}$	I	Mute control ∗2
12	NC	–	Non connection	26	MD/DM0	I	Mode control data / deemphasis select 1 ∗2
13	VOUTR	O	R ch analog voltage output	27	MC/DM1	I	Mode control BCK / deemphasis select 2 ∗2
14	AGND1	–	Analog GND	28	ML/IIS	I	Mode control latch / Input format select ∗2

Note :

∗1 : Schmitt trigger input

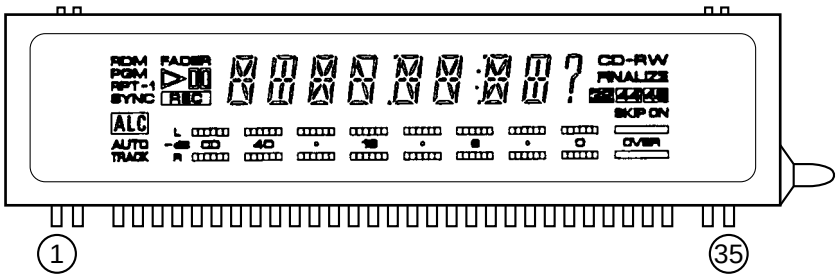
∗2 : Schmitt trigger input with pull-up resistor

∗3 : Schmitt trigger input with pull-down resistor

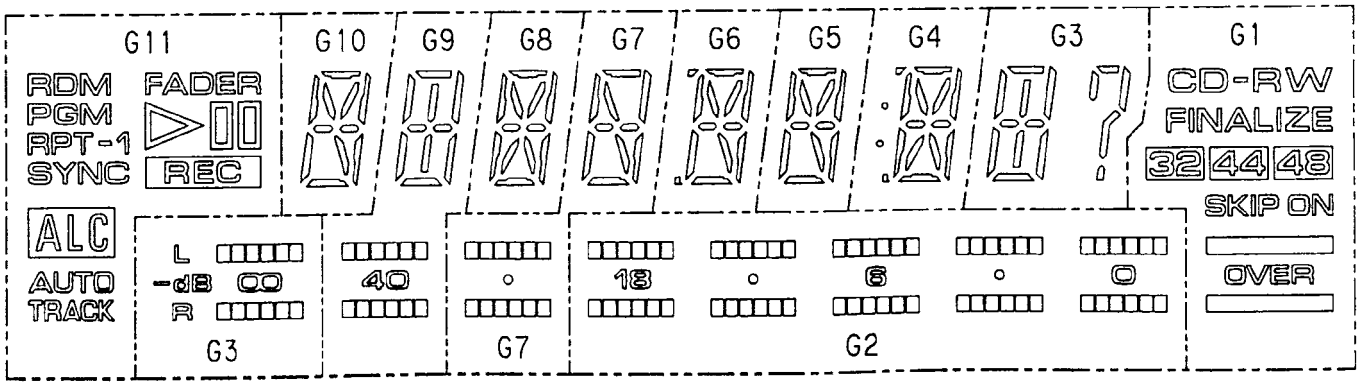
7.1.2 DISPLAY

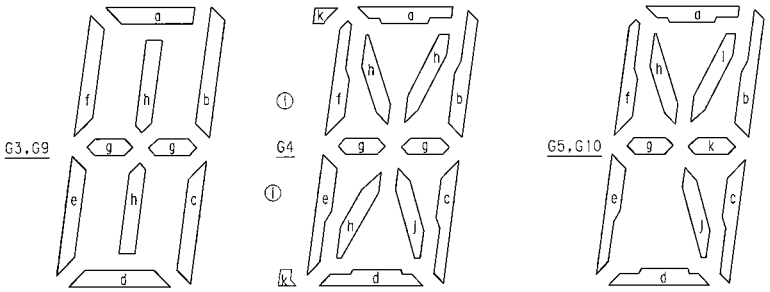
■ PEL1097 (FUNCTION ASSY : V701)

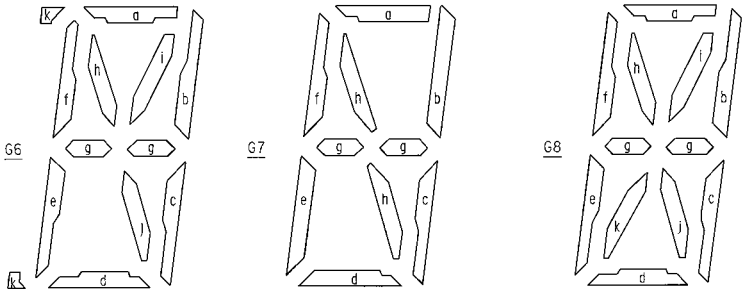
• FL TUBE

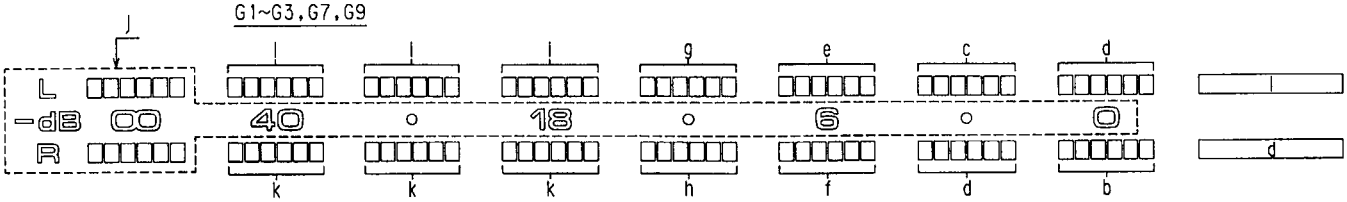


• Anode & Grid Assignment









	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
S1	a	a	a	a	a	a	a	a	a	a	FADER
S2	OVER	b	b	b	b	b	b	b	b	b	▯▯
S3	(CD-R)W	c	c	c	c	c	c	c	c	c	▷
S4	32	d	d	d	d	d	d	d	d	d	REC
S5	44	e	e	e	e	e	e	e	e	e	RDM
S6	CD(-RW)	f	f	f	f	f	f	f	f	f	PGM
S7	(CD)-R(W)	g	g	g	g	g	g	g	g	g	RPT
S8	ON	h	h	h	h	h	h	h	h	h	-1
S9	i	i	?	i	i	i	i	i	i	i	SYNC
S10	48	j	j	j	j	j	j	j	j	j	ALC
S11	SKIP	k		k	k	k	k	k	k	k	AUTO TRACK
S12	FINALIZE										

• Pin Assignment

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Assignment	F1	F1	NP	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	G11	G10	G9	G8

Pin No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Assignment	G7	G6	G5	G4	G3	G2	G1	S12	NL	NL	NL	NL	NL	NL	NP	F2	F2

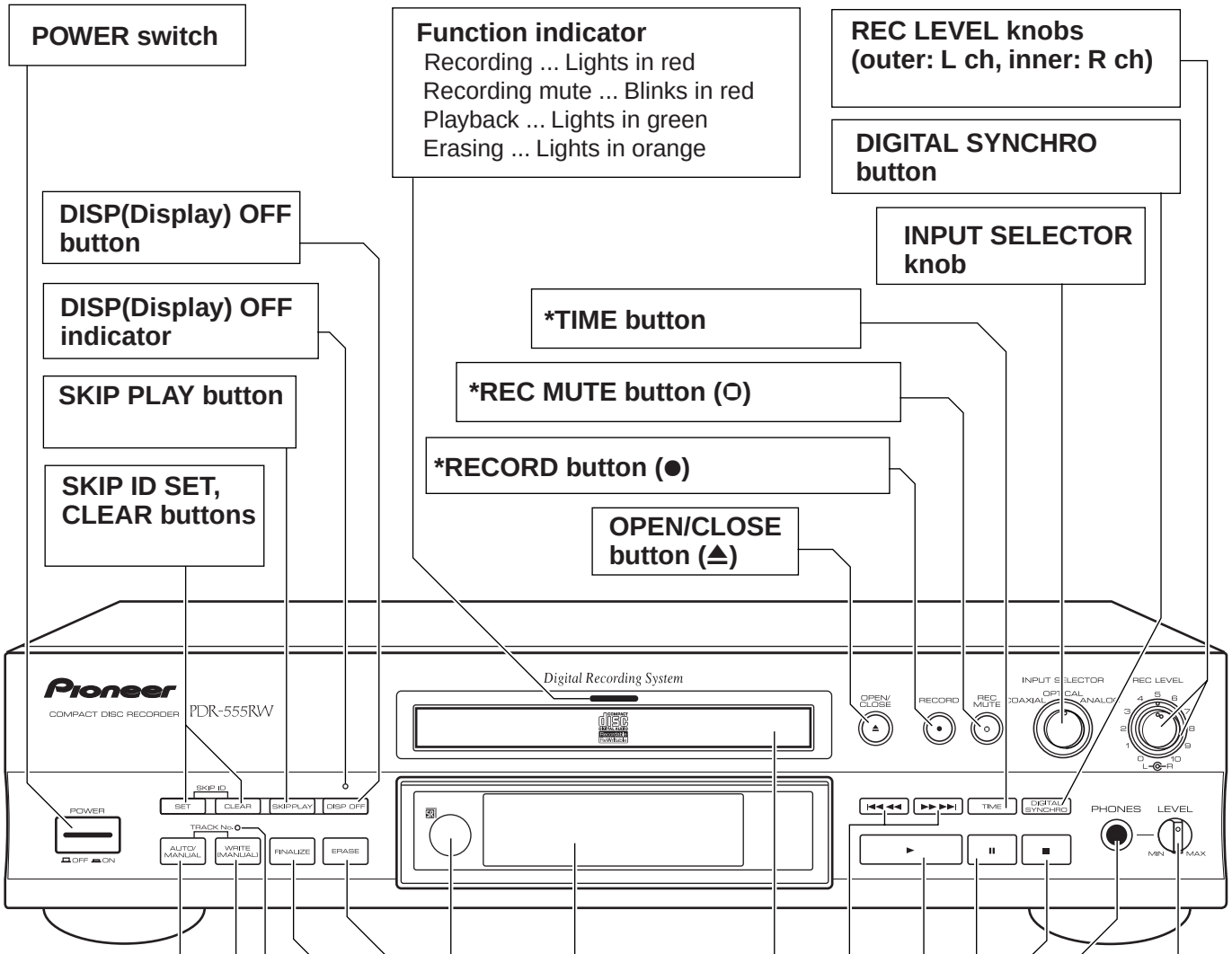
F1,F2:Filament G1~G11:Grid S1~S12:Anode NP:No Pin NL:No Lead

8. PANEL FACILITIES AND SPECIFICATIONS

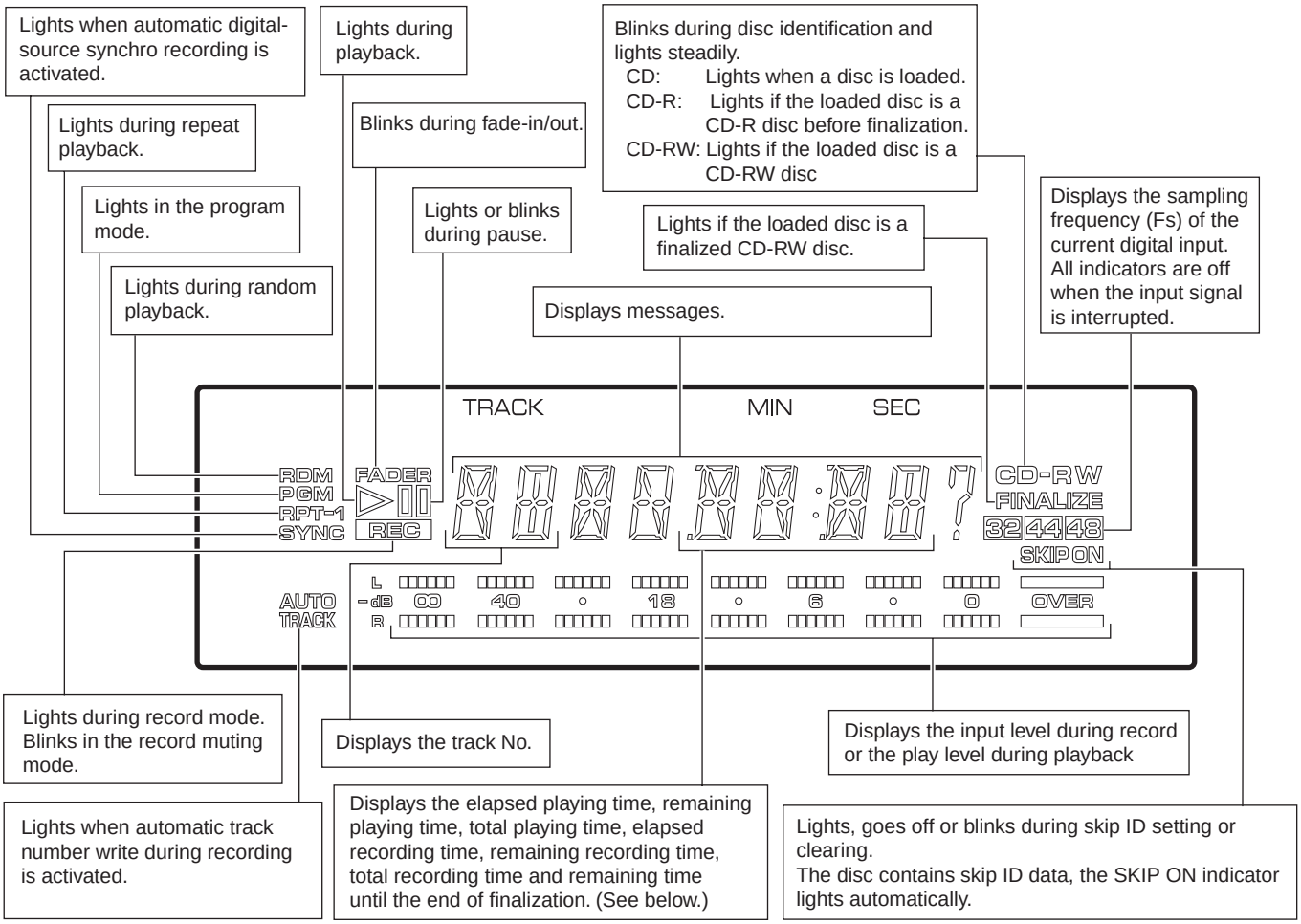
• PANEL FACILITIES

FRONT PANEL

The operations available using buttons marked "*" are also available using the buttons with the same names or inscriptions on the remote control unit.



DISPLAY PANEL


Lights when automatic digital-source synchro recording is activated.
Lights during playback.
Blinks during disc identification and lights steadily.
CD: Lights when a disc is loaded.
CD-R: Lights if the loaded disc is a CD-R disc before finalization.
CD-RW: Lights if the loaded disc is a CD-RW disc
Lights during repeat playback.
Blinks during fade-in/out.
Lights in the program mode.
Lights or blinks during pause.
Lights if the loaded disc is a finalized CD-RW disc.
Displays the sampling frequency (Fs) of the current digital input. All indicators are off when the input signal is interrupted.
Lights during random playback.
Displays messages.
TRACK
MIN
SEC
RDM
PGM
RPT-1
SYNC
FADER
REC
CD-RW
FINALIZE
32 44 48
SKIP ON
AUTO TRACK
L
dB
R
OVER
Lights during record mode. Blinks in the record muting mode.
Displays the track No.
Displays the input level during record or the play level during playback
Lights when automatic track number write during recording is activated.
Displays the elapsed playing time, remaining playing time, total playing time, elapsed recording time, remaining recording time, total recording time and remaining time until the end of finalization. (See below.)
Lights, goes off or blinks during skip ID setting or clearing.
The disc contains skip ID data, the SKIP ON indicator lights automatically.

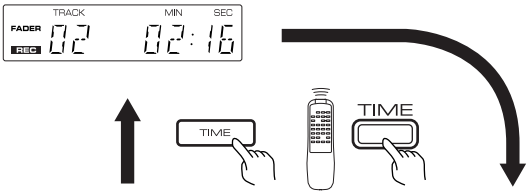
Switching the time display

The following operation allows you to check the recording time information during recording or playing time information during playback. Every time the TIME button is pressed, the time information contents are switched in order of Ⓐ → Ⓑ → Ⓒ → Ⓓ.

The display mode varies depending on whether the current operation is recording or playing back (in order of Ⓐ → Ⓑ → Ⓒ during recording).

During recording

Ⓐ : Elapsed recording time
(2 min. 16 sec. after the start of track No. 2)



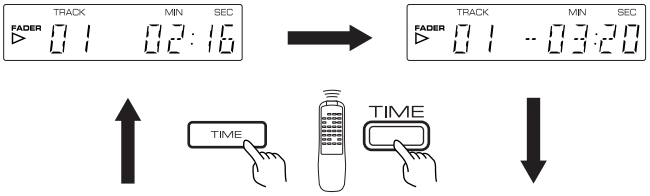
Ⓒ : Total recording time
(3 min. 50 sec. of 2-track recording)

Ⓑ : Remaining recording time
(56 min. 10 sec. remaining on the disc)

During playback

Ⓐ : Elapsed playing time
(2 min. 16 sec. after the start of track No. 1)

Ⓑ : Remaining playing time of track being played (3 min. 20 sec. remaining for track No. 1)

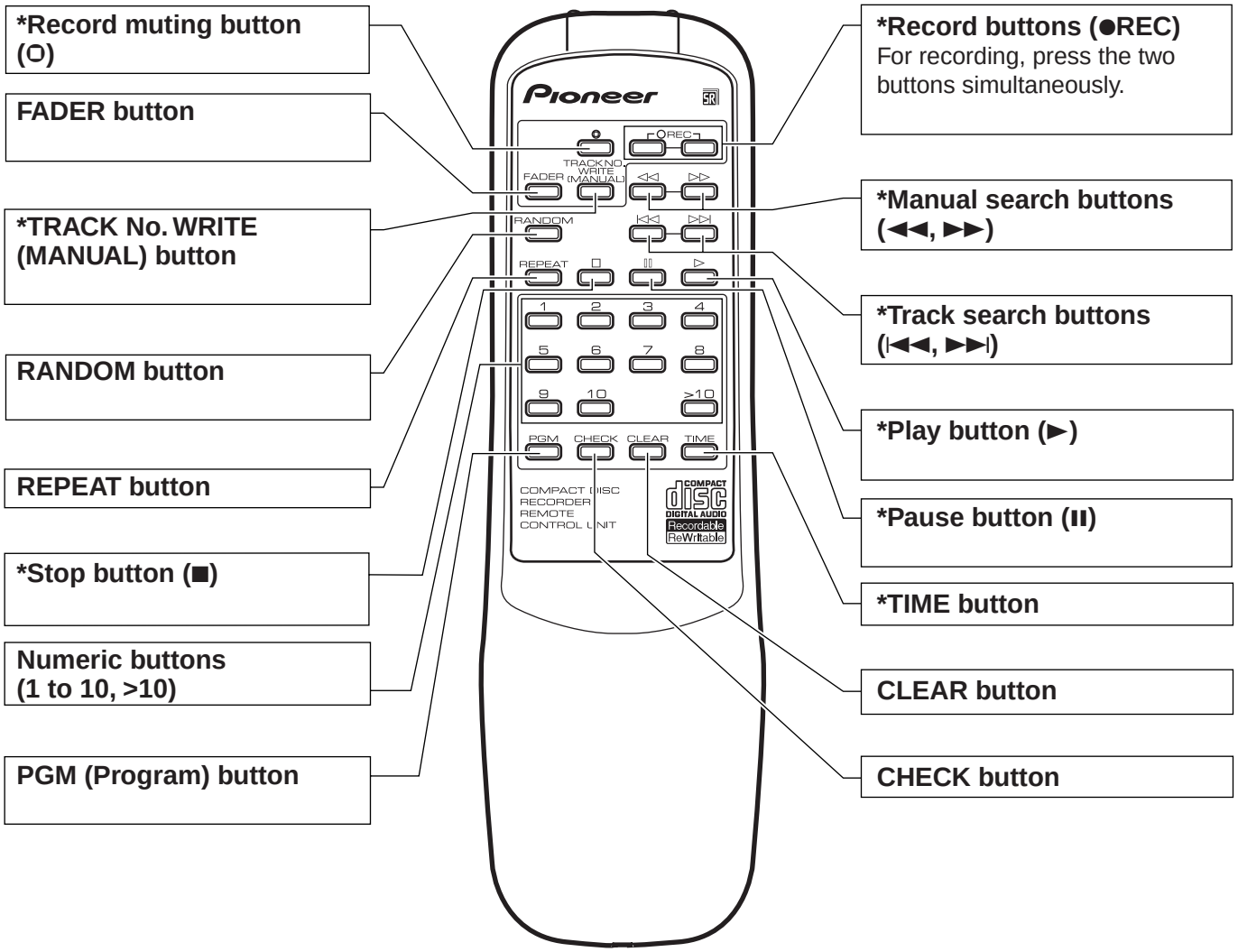


Ⓓ : Total playing time
(60 min. 0 sec. for 8 tracks)

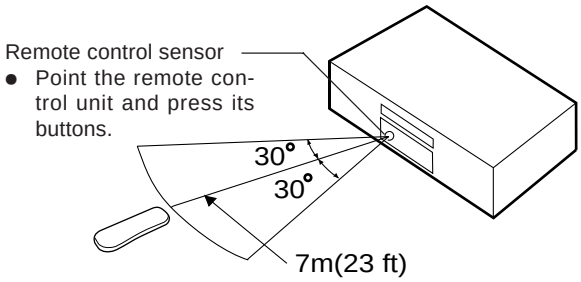
Ⓒ : Remaining playing time of all tracks on disc being played (46 min. 40 sec. remaining on the disc)

REMOTE CONTROL UNIT

Operations performed by buttons marked "*" can also be carried out by using buttons with the same name on the main unit.



■ Remote controllable range



Caution on the remote control operation

- Remote control may be impossible if there is an obstacle between the remote control unit and main unit or if the remote control unit is operated at too great of an angle from the remote control sensor.
- Erroneous operation may occur if strong light such as direct sunlight or fluorescent lamp light is incident to the remote control sensor.
- The main unit may operate erroneously if it is used near equipment radiating infrared rays or if the infrared remote control unit of other equipment is used near the unit. On the contrary, if this remote control unit is operated near another piece of equipment which can be controlled with infrared rays, the equipment may operate erroneously.
- Replace batteries when the remote controllable range decreases noticeably.

• SPECIFICATIONS (KU/CA TYPE)

1. GENERAL

Model ..... Compact disc audio system
Applicable discs ..... CDs, CD-Rs and CD-RWs
Power supply ..... AC 120 V, 60 Hz
Power consumption ..... 20 W
Operating temperature ..... +5 °C to +35 °C
(+41 °F to +95 °F)
Weight (without package) ..... 4.8 kg (10 lb 9 oz)
Max. dimensions ..... 420 (W) x 385 (D) x 105 (H) mm
16-9/16 (W) x 15-3/16 (D) x 4-1/8 (H) in

2. AUDIO UNIT

Frequency characteristics ..... 2 Hz to 20 kHz
Playback S/N ..... 110 dB (EIAJ)
Playback dynamic range ..... 98 dB (EIAJ)
Playback total harmonic distortion ..... 0.002 % (EIAJ)
Playback channel separation ..... 100 dB
Recording S/N ..... 92 dB
Recording dynamic range ..... 92 dB
Recording total harmonic distortion ..... 0.005 %
Output voltage ..... 2 V
Wow-flutter ..... Less than measurement limit
((±0.001 % W.PEAK) (EIAJ))
Number of channels ..... 2 channels (stereo)
Digital output
Coaxial output ..... 0.5 Vp-p ±20 % (75 Ω)
Optical output .... –15 to –21 dBm (wavelenght: 660 nm)
Frequency deflection: Level 2 (standard mode)

* Recording specification values are for the LINE input (ANALOG).

3. INPUT JACKS

Optical digital input jack
Coaxial digital input jack
Audio LINE input jack

4. OUTPUT JACKS

Optical digital output jack
Coaxial digital output jack
Audio LINE output jack

5. ACCESSORIES

- Remote control unit 1
- Size AA/R6 dry cell batteries 2
- Audio cable 2
- AC power cord 1
- Operating Instructions 1

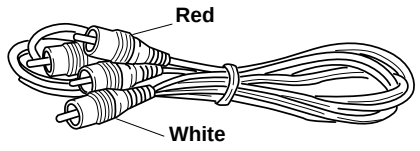
6. PICKUP

- Laser wavelength (λ) ..... 778 to 787 nm
- Object lens out (3 beam total) 23mW
- Laser class ..... IIIb

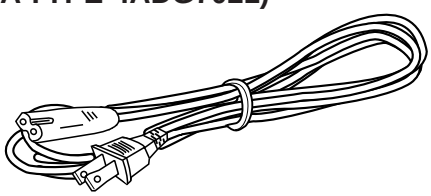
NOTE:
The specifications and design of this product are subject to change without notice, due to improvements.

• ACCESSORIES

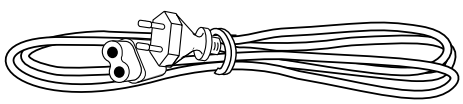
Audio cables ... x 2
(analog recording, analog playback output)
(PDE1248) (L=1m)



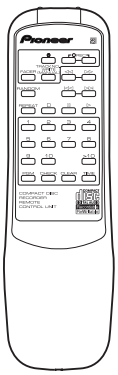
AC power cord
(KU/CA TYPE :ADG7021)

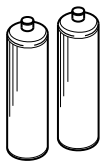


(MY TYPE :ADG1127)



Remote control unit
CU-PD099 (PWW1144)





Size "AA"/R6 dry cell batteries ... x 2